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     (FILE 'HOME' ENTERED AT 17:33:30 ON 31 MAR 2009)

     FILE 'HCAPLUS' ENTERED AT 17:33:47 ON 31 MAR 2009
L1          5522 S (BETA GLUCAN)
L2          4643 S TETRASACCHARIDE OR PENTASACCHARIDE
L3            19 S L1 AND L2

     FILE 'REGISTRY' ENTERED AT 17:42:03 ON 31 MAR 2009
L4                STRUCTURE UPLOADED
L5             0 S L4
L6            14 S L4 SSS FULL

     FILE 'HCAPLUS' ENTERED AT 17:43:11 ON 31 MAR 2009
L7             2 S L6/THU
L8        928245 S CANCER OR TUMOR OR NEOPLSSTIC OR NEOPLASM OR ANTITUMOR OR ANT
L9            13 S L6
L10            0 S L8 AND L9
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=> file hcaplus
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                       0.22       0.22

FILE 'HCAPLUS' ENTERED AT 17:33:47 ON 31 MAR 2009
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FILE LAST UPDATED: 30 Mar 2009  (20090330/ED)

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reclassification data for the third quarter of 2008.

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This file contains CAS Registry Numbers for easy and accurate
substance identification.

=> s (beta glucan)
       1599321 BETA
         16950 GLUCAN
L1        5522 (BETA GLUCAN)
                (BETA(W)GLUCAN)

=> s tetrasaccharide or pentasaccharide
          3004 TETRASACCHARIDE
          1914 PENTASACCHARIDE
L2        4643 TETRASACCHARIDE OR PENTASACCHARIDE

=> s l1 and l2
L3          19 L1 AND L2

=> d l3 1-19 ti abs bib

L3   ANSWER 1 OF 19  HCAPLUS  COPYRIGHT 2009 ACS on STN
TI   Characterization of the lipopolysaccharide and β -
     glucan of the fish pathogen Francisella victoria
AB   Lipopolysaccharide (LPS) and β -glucan from
     Francisella victoria, a fish pathogen and close relative of highly
     virulent mammal pathogen Francisella tularensis, have been analyzed using
     chemical and spectroscopy methods.  The polysaccharide part of the LPS was
     found to contain a nonrepetitive sequence of 20 monosaccharides as well as
     alanine, 3-aminobutyric acid, and a novel branched amino acid, thus
     confirming F. victoria as a unique species.  The structure identified
     composes the largest oligosaccharide elucidated by NMR so far, and was
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possible to solve using high field NMR with cold probe technol. combined with the latest pulse sequences, including the first application of H2BC sequence to oligosaccharides. The non-phosphorylated lipid A region of the LPS was identical to that of other Francisellae, although one of the lipid A components has not been found in Francisella novicida. The heptoseless core-lipid A region of the LPS contained a linear pentasaccharide fragment identical to the corresponding part of F. tularensis and F. novicida LPSs, differing in side-chain substituents. The linkage region of the O-chain also closely resembled that of other Francisella. LPS preparation contained two characteristic glucans, previously observed as components of LPS prepns. from other strains of Francisella: amylose and the unusual β-(1-6)-glucan with (glycerol)2phosphate at the reducing end.

AN 2006:792115 HCAPLUS <<LOGINID::20090331>>
DN 145:351592
TI Characterization of the lipopolysaccharide and β -glucan of the fish pathogen Francisella victoria
AU Kay, William; Petersen, Bent O.; Duus, Jens O.; Perry, Malcolm B.; Vinogradov, Evgeny
CS Department of Biochemistry and Microbiology, University of Victoria, BC, Can.
SO FEBS Journal (2006), 273(13), 3002-3013
CODEN: FJEOAC; ISSN: 1742-464X
PB Blackwell Publishing Ltd.
DT Journal
LA English
RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 2 OF 19 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Structural Basis for the Substrate Specificity of a Bacillus 1,3-1,4-β-Glucanase
AB Depolymn. of polysaccharides is catalyzed by highly specific enzymes that promote hydrolysis of the scissile glycosidic bond by an activated water mol. 1,3-1,4-β-Glucanases selectively cleave β-1,4 glycosidic bonds in 3-O-substituted glucopyranosyl units within polysaccharides with mixed linkage. The reaction follows a double-displacement mechanism by which the configuration of the anomeric C1-atom of the glucosyl unit in subsite -I is retained. Here we report the high-resolution crystal structure of the hybrid 1,3-1,4-β-glucanase H(A16-M)E105Q/E109Q in complex with a β -glucan tetrasaccharide. The structure shows four β-D-glucosyl moieties bound to the substrate-binding cleft covering subsites -IV to -I, thus corresponding to the reaction product. The ten active-site residues Asn26, Glu63, Arg65, Phe92, Tyr94, Glu105, Asp107, Glu109, Asn182 and Trp184 form a network of hydrogen bonds and hydrophobic stacking interactions with the substrate. These residues were previously identified by mutational anal. as significant for stabilization of the enzyme-carbohydrate complex, with Glu105 and Glu109 being the catalytic residues. Compared to the Michaelis complex model, the tetrasaccharide moiety is slightly shifted toward that part of the cleft binding the non-reducing end of the substrate, but shows previously unanticipated strong stacking interactions with Phe92 in subsite -I. A number of specific hydrogen-bond contacts between the enzyme and the equatorial O2, O3 and O6 hydroxyl groups of the glucosyl residues in subsites -I, -II and -III are the structural basis for the observed substrate specificity of 1,3-1,4-β-glucanases. Kinetic anal. of enzyme variants with the all β-1,3 linked polysaccharide laminarin identified key residues mediating substrate specificity in good agreement with the structural data. The comparison with structures of the apo-enzyme H(A16-M) and a covalent enzyme-inhibitor (E·I) complex, together with kinetic and mutagenesis data, yields new insights into the

structural requirements for substrate binding and catalysis. A detailed view of enzyme-carbohydrate interactions is presented and mechanistic implications are discussed.

AN 2006:227352 HCAPLUS <<LOGINID::20090331>>
DN 144:463208
TI Structural Basis for the Substrate Specificity of a Bacillus 1,3-1,4-β-Glucanase
AU Gaiser, Olaf J.; Piotukh, Kirill; Ponnuswamy, Mondikalipudur N.; Planas, Antoni; Borriss, Rainer; Heinemann, Udo
CS Max-Delbrueck-Centrum fuer Molekulare Medizin, Forschungsgruppe Kristallographie, Berlin, 13125, Germany
SO Journal of Molecular Biology (2006), 357(4), 1211-1225
CODEN: JMOBAK; ISSN: 0022-2836
PB Elsevier B.V.
DT Journal
LA English
RE.CNT 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 3 OF 19 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Solution and Conformational Properties of Wheat β-D-Glucans Studied by Light Scattering and Viscometry
AB The solution properties of wheat β -glucan were investigated by light scattering and viscometric methods. The hydrodynamic radius (Rh), weight average mol. weight (Mw), radius of gyration (Rg), and the second virial coefficient (A2) of wheat β -glucan were determined by both dynamic and static light scattering methods, whereas the critical concns. (c*) of the solution were derived from [η] via viscometric method. The structure sensitive parameters, ρ (1.52-1.62), the conformation parameter ν (0.62), and the Mark-Houwink-Sakurada exponents α (0.78) confirmed the random coil conformation of wheat β -glucan in 0.5 M NaOH solution The characteristic ratio (4.97) was obtained by the random flight model, and the statistical segment length (8.83 nm) was derived from the wormlike cylinder model. It was found that the wormlike cylinder model could explain the chain stiffness better than the random flight model, which suggested an extended random coil conformation of wheat . beta.-glucan in 0.5 M NaOH solution The study also revealed that the structure feature of wheat β -glucan; i.e., the higher trisaccharide-to-tetrasaccharide ratio contributed to the stiffer chain conformation compared with other cereal β-glucans.
AN 2006:25429 HCAPLUS <<LOGINID::20090331>>
DN 144:274844
TI Solution and Conformational Properties of Wheat β-D-Glucans Studied by Light Scattering and Viscometry
AU Li, Wei; Cui, Steve W.; Wang, Qi
CS Food Research Program, Agriculture and Agri-Food Canada, Guelph, ON, N1G 5C9, Can.
SO Biomacromolecules (2006), 7(2), 446-452
CODEN: BOMAF6; ISSN: 1525-7797
PB American Chemical Society
DT Journal
LA English
RE.CNT 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 4 OF 19 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Biosynthesis of (1→3),(1→4)- β -glucan in developing endosperms of barley (Hordeum vulgare)

AB A (1→3),(1→4)- β -glucan synthase catalyzing the synthesis of (1→3),(1→4)- β -glucan (mixed-linkage glucan) was investigated using microsomal membranes prepared from developing barley (Hordeum vulgare L. cv. Shikokuhadaka 97) endosperms harvested 21 days after flowering. The microsomal fraction produced (1→3),(1→4)- β -glucan by incorporation of [14C]Glc from UDP-[14C]Glc. The production of (1→3),(1→4)- β -glucan was ascertained by specific enzymic digestion with endo-(1→3),(1→4)-β-glucanase (lichenase; EC 3.2.1.73) from Bacillus amyloliquefaciens, which released a radiolabeled trisaccharide (3-O-β-cellobiosyl-glucose) and a tetrasaccharide (3-O-β-cellotriosyl-glucose), the diagnostic oligosaccharides for the identification of (1→3),(1→4)-. beta.-glucan. Digestion of the products with exo-(1→3)-β-glucanase (EC 3.2.1.58) from Basidiomycete QM806 released radiolabeled Glc, indicating that not only (1→3),(1→4)-β-glucans but also (1→3)-β-glucans (callose) had been formed due to the presence of (1→3)- β -glucan (callose) synthase (EC 2.4.1.34) in the microsomal fraction. The activity of (1→3),(1→4)- β -glucan synthase was maximal at pH 9.0 and at 25°C and in the presence of at least 2 mM Mg2+. The apparent Km and Vmax values for UDP-Glc were 0.33 mM and 480 pmol min-1 mg protein-1, resp. Investigating the dependence of enzyme activity on developmental stage (7-35 days after flowering) of the endosperms, we found an increase of activity during the initial development reaching a maximum at 19 days, followed by a gradual decrease as the endosperms matured. The amount of (1→3),(1→4)-. beta.-glucan in the cell walls of the endosperms, however, increased gradually towards maturation, even after 19 days. Analyzing the relationship between enzyme activity and (1→3),(1→4)- β -glucan deposition in cell walls of endosperms prepared from 12 different barley varieties harvested 11-22 days after flowering showed that some varieties had both low activity and low glucan content, and in some both were high. But for several other varieties, the availability of donor substrate and other factors seem to influence the production of (1→3),(1→4)-. beta.-glucan as well.

AN 2005:1064444 HCAPLUS <<LOGINID::20090331>>
DN 144:188086

TI Biosynthesis of (1→3),(1→4)- β -glucan in developing endosperms of barley (Hordeum vulgare)

AU Tsuchiya, Kouji; Urahara, Takeshi; Konishi, Tomoyuki; Kotake, Toshihisa; Tohno-oka, Takuji; Komae, Kozo; Kawada, Naoyuki; Tsumuraya, Yoichi
CS Department of Biochemistry and Molecular Biology, Faculty of Science, Saitama University, 255 Shimo-okubo, Sakura-ku, Saitama, 338-8570, Japan

SO Physiologia Plantarum (2005), 125(2), 181-191
CODEN: PHPLAI; ISSN: 0031-9317
PB Blackwell Publishing Ltd.
DT Journal
LA English
RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 5 OF 19 HCAPLUS COPYRIGHT 2009 ACS on STN

TI Synthesis of two isomeric pentasaccharides, the possible repeating unit of the β -glucan from the micro fungus Epicoccum nigrum Ehrenb. ex Schlecht

AB Two isomeric pentasaccharides, β-D-Glcp-(1→3)-[β-D-Glcp-(1→6)]-β-D-Glcp-(1→3)-[β-D-Glcp-(1→6)]-

β-D-Glcp (I) and β-D-Glcp-(1→6)-β-D-Glcp-(1→3)-[β-D-Glcp-(1→3)-β-D-Glcp-(1→6)]-β-D-Glcp (II), the possible repeating unit of the β -glucan from the micro fungus Epicoccum nigrum Ehrenb. ex Schlecht, were synthesized as their 4-methoxyphenyl glycosides in a regio- and stereoselective manner. The pentasaccharide I was obtained from 3-O-selective glycosylation of 4-methoxyphenyl 4,6-O-benzylidene-β-D-glucopyranoside (III) with 2,3,4,6-tetra-O-benzoyl-β-D-glucopyranosyl-(1→3)-[2,3,4,6-tetra-O-benzoyl-β-D-glucopyranosyl-(1→6)]-2,4-di-O-acetyl-α-D-glucopyranosyl trichloroacetimidate followed by acetylation, debenzylidenation, and 6-O-selective glucosylation with 2,3,4,6-tetra-O-benzoyl-β-D-glucopyranosyl trichloroacetimidate, and then by deprotection. The pentasaccharide II was obtained from 3-O-selective coupling of III with 2,3,4,6-tetra-O-benzoyl-β-D-glucopyranosyl-(1→6)-2,4-di-O-acetyl-3-O-allyl-α-D-glucopyranosyl trichloroacetimidate followed by acetylation, debenzylidenation, and 6-O-selective glycosylation with 2,3,4,6-tetra-O-benzoyl-β-D-glucopyranosyl-(1→3)-2,4,6-tri-O-acetyl-α-D-glucopyranosyl trichloroacetimidate, and finally by deprotection.

AN 2002:953003 HCAPLUS <<LOGINID::20090331>>
DN 138:369079
TI Synthesis of two isomeric pentasaccharides, the possible repeating unit of the β -glucan from the micro fungus Epicoccum nigrum Ehrenb. ex Schlecht
AU Zeng, Ying; Zhang, Wenhui; Ning, Jun; Kong, Fanzuo
CS Research Center for Eco-Environmental Sciences, Academia Sinica, Beijing, 100085, Peop. Rep. China
SO Carbohydrate Research (2002), 337(24), 2383-2391
CODEN: CRBRAT; ISSN: 0008-6215
PB Elsevier Science Ltd.
DT Journal
LA English
OS CASREACT 138:369079
RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 6 OF 19 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Structural characteristics of water-extractable nonstarch polysaccharides from barley malt
AB Water-extractable (WE) material was isolated from a Canadian barley malt (cv. Harrington). The purified WE material contained mainly arabinoxylans, β-glucans, proteins, and small amts. of arabinogalactans and mannose-containing polymers. WE material was treated with specific enzymes to obtain 2 fractions: one enriched in arabinoxylan (AX) and another enriched in β -glucan (BG). The AX fraction was further fractionated by stepwise precipitation in (NH4)2SO4 into 5 arabinoxylan subfractions. 1H-NMR spectroscopy and sugar analyses revealed a relatively high content of unsubstituted xylose residues (48-58%) as well as a relatively high content of doubly substituted xylose residues (28-33%) in the structure of the arabinoxylans. β-Glucans constituted a minor portion of water-extractable malt polysaccharides and were characterized by high levels of tri- and tetrasaccharide residues (93.4%) with a molar ratio of 2.19 for cellotriosyl to cellotetraosyl units. Size-exclusion chromatog. revealed that the WE material contained several polymer populations. One population had a very high mol. weight that appeared to be the result of aggregation. The AX fraction contained higher mol. weight polymers than the BG fraction.
AN 2002:394476 HCAPLUS <<LOGINID::20090331>>

DN 137:124431
TI Structural characteristics of water-extractable nonstarch polysaccharides from barley malt
AU Cyran, M.; Izydorczyk, M. S.; MacGregor, A. W.
CS Department of Nutritional Evaluation of Plant Materials, Institute of Plant Breeding, Blonie, 05-870, Pol.
SO Cereal Chemistry (2002), 79(3), 359-366
CODEN: CECHAF; ISSN: 0009-0352
PB American Association of Cereal Chemists
DT Journal
LA English
RE.CNT 55 THERE ARE 55 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 7 OF 19 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Plant resistance suppressors in the pathosystem formed by potato and the causal agent of late blight
AB The properties and effects of two plant resistance suppressors (1,3-β-1,6- β -glucan and a pentasaccharide of xyloglucan origin) involved in the pathosystem of potato (Solanum tuberosum) and the causal agent of blight (Phytophthora infestans (Mont) de Bary) were compared. The microbial 1,3-β-1,6-. beta.-glucan suppressed the defense response over a narrow concentration range (10-2 M), whereas the plant pentasaccharide had a broad range of effective concns. (10-12 to 10-6 M). In the pathosystem of potato and the causal agent of late blight, the . beta.-glucan caused a local and race-specific suppressor effect on the plant host defense response. In contrast, the pentasaccharide caused both local and systemic suppression of potato resistance and the presence of terminal fucosyl residue in the xyloglucan oligosaccharide played a decisive role in its effect. The recognition of both suppressors by potato cell membrane sites is discussed.
AN 2001:729194 HCAPLUS <<LOGINID::20090331>>
DN 136:18053
TI Plant resistance suppressors in the pathosystem formed by potato and the causal agent of late blight
AU Ozeretskovskaya, O. L.; Vasyukova, N. I.; Perekhod, E. A.; Chalenko, G. I.; Il'inskaya, L. I.; Gerasimova, N. G.
CS Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, 117071, Russia
SO Applied Biochemistry and Microbiology (Translation of Prikladnaya Biokhimiya i Mikrobiologiya) (2001), 37(5), 506-511
CODEN: APBMAC; ISSN: 0003-6838
PB MAIK Nauka/Interperiodica Publishing
DT Journal
LA English
RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 8 OF 19 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Structural characterization of water-soluble β -glucan of oat bran
AB β -Glucan was isolated from oat bran in a highly purified form. The bran was characterized for its contents of dietary fiber, β -glucan, fat and protein. The isolated . beta.-glucan was free of protein and contained only glucose in GC sugar anal. Two types of β -glucan were obtained with different solubilities. Their molar masses were 1.6 million for the less soluble and 1.1 million for the more readily soluble type. No structural differences were found. The two-dimensional correlation NMR

spectrum of the isolated β -glucan showed that the glucose units are joined with 1,3- and 1,4-linkages only. The oligosaccharides produced by the action of a specific enzyme, lichenase, were analyzed by HPLC and capillary zone electrophoresis. The major products are 32-β-D-glucosyl cellobiose (trisaccharide) and 33-β-D-glucosyl cellotriose (tetrasaccharide), which account for 95% of the whole. Also, 34-β-D-glucosyl cellotetraose (pentasaccharide) and other oligosaccharides with d.p. (DP) higher than 5 were detected as minor components.

AN 2000:207706 HCAPLUS <<LOGINID::20090331>>
DN 132:333664
TI Structural characterization of water-soluble β - glucan of oat bran
AU Johansson, L.; Virkki, L.; Maunu, S.; Lehto, M.; Ekholm, P.; Varo, P.
CS Department of Applied Chemistry and Microbiology, University of Helsinki, Helsinki, FIN-00014, Finland
SO Carbohydrate Polymers (2000), 42(2), 143-148
CODEN: CAPOD8; ISSN: 0144-8617
PB Elsevier Science Ireland Ltd.
DT Journal
LA English
RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 9 OF 19 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Structure and physicochemical properties of barley non-starch polysaccharides. I. Water-extractable β-glucans and arabinoxylans
AB Water-soluble non-starch polysaccharides were extracted from a Canadian malting barley (cv. Harrington) by sequential treatment with water at 40°C (WE40) and 65°C (WE65). The yields were 1.4 and 1.3% (weight/weight), resp., of the dry barley grist. The WE40 extract was composed of 82.5% glucose, 8.9% xylose, and 7.0% arabinose residues, whereas WE65 contained 93.3% Glc, 3.3% Xyl, and 2.5% Ara. Only minute amts. of mannose and galactose residues were found in either fraction. Both exts. were further fractionated by stepwise (NH4)2SO4 precipitation into several polysaccharide populations. Subfractions from both exts., obtained up to 45% saturation with (NH4)2SO4, contained mostly β-glucans, whereas subfractions precipitated at increasing saturation levels of (NH4)2SO4 (45-100%) contained progressively more arabinoxylans and less β-glucans. Compared to WE40, the WE65 extract was enriched in β-glucans populations with higher mol. size, higher limiting viscosity values, and higher content of β-(1 → 4) linkages. The ratio of tri-/tetrasaccharide oligomers was also higher in β-glucans extracted at 65°C than those extracted at 40°C. Arabinoxylans in both exts., WE40 and WE65, were highly substituted and contained large proportions of doubly substituted xylose residues.
AN 1998:508755 HCAPLUS <<LOGINID::20090331>>
DN 129:213214
OREF 129:43227a,43230a
TI Structure and physicochemical properties of barley non-starch polysaccharides. I. Water-extractable β-glucans and arabinoxylans
AU Izydorczyk, M. S.; Macri, L. J.; MacGregor, A. W.
CS Grain Research Laboratory, Winnipeg, MB, R3C 3G8, Can.
SO Carbohydrate Polymers (1998), 35(3-4), 249-258
CODEN: CAPOD8; ISSN: 0144-8617
PB Elsevier Science Ltd.
DT Journal
LA English
RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 10 OF 19 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Biosynthesis of (1,3)(1,4)-β -glucan and (1,3)-.
beta.-glucan in barley (Hordeum vulgare L.). Properties
of the membrane-bound glucan synthases
AB Mixed membrane prepns. from the coleoptiles and first leaves of young
barley (Hordeum vulgare L. cv. Triumph) plants catalyzed the synthesis of
55% methanol-insol. labeled material from UDP-[U-14C]glucose, the main
components of which were identified as (1,3)(1,4)-β- and
(1,3)-β-D-glucans. The membrane prepns. also catalyzed the
transformation of UDP-glucose into labeled low-mol.-weight products, mainly
glucose (by phosphatase action), glucose-1-phosphate (by phosphodiesterase
action) and glyco(phospho)lipids (by glycosyltransferase action). The
formation of (1,3)(1,4)-β-glucans, (1,3)-β-glucans, and the
other reactions competing for UDP-glucose, were monitored simultaneously
and quant. by a novel procedure based on enzymic anal., thin-layer
chromatog. and digital autoradiog. Thus, it was possible (1) to optimize
conditions to obtain (1,3)(1,4)-β -glucan
synthesis or (1,3)-β -glucan synthesis in
isolation, and (2) to study the influence of temperature, pH, cofactors,
substrate concentration etc. on the (1,3)(1,4)- and (1,3)-β -
glucan synthesis reactions even when both occurred together. The
synthesis of both β-glucans was optimal at 20°. In Tris-HCl
buffer, the pH optima for (1,3)(1,4)-β -glucan
synthesis and (1,3)-β -glucan synthesis were pH
8.5 and pH 7.0, resp. Both glucan-synthesis reactions required Mg2+:
(1,3)-β -glucan synthesis was optimal at 2 mM,
whereas (1,3)(1,4)-β -glucan synthesis continued
to increase up to 200 mM Mg2+, when the ion was supplied as the sulfate.
(1,3)-β -Glucan synthesis was Ca2+ dependent and
this dependence could be abolished by proteinase treatment. The Km with
respect to UDP-glucose was 1.5 mM for (1,3)-β -
glucan synthesis and approx. 1 mM for (1,3)(1,4)-β -
glucan synthesis. The (1,3)(1,4)-β -glucan
formed in vitro had the same ratio of trisaccharide to
tetrasaccharide structural blocks irresp. of the exptl. conditions
used during the synthesis: its enzymic fragmentation pattern was
indistinguishable from that of barley endosperm (1,3)(1,4)-.beta
.-glucan. This indicates either a single synthase enzyme, which
is responsible for the formation of both linkage types, or two enzymes
which are very tightly coupled functionally.
AN 1995:323818 HCAPLUS <<LOGINID::20090331>>
DN 122:101778
OREF 122:19063a,19066a
TI Biosynthesis of (1,3)(1,4)-β -glucan and (1,3)-.
beta.-glucan in barley (Hordeum vulgare L.). Properties
of the membrane-bound glucan synthases
AU Becker, Martin; Vincent, Christine; Reid, J. S. Grant
CS Dep. Biological Mol. Sci., Univ. Stirling, Stirling, FK9 4LA, UK
SO Planta (1995), 195(3), 331-8
CODEN: PLANAB; ISSN: 0032-0935
PB Springer
DT Journal
LA English

L3 ANSWER 11 OF 19 HCAPLUS COPYRIGHT 2009 ACS on STN
TI The conformation of the tri- and tetrasaccharide produced in the
hydrolysis of barley glucan with the enzyme endo-1,3-1,4-β -
glucan 4-glucanohydrolase from Bacillus licheniformis
AB The solution conformation of the tri- and tetrasaccharide obtained
by enzymic degradation of glucan has been analyzed using mol. mechanics and
dynamics calcns. and NMR data. The overall shape of both compds. is

fairly similar and may be described by an equilibrium formed by conformers included in the low energy regions for both glycosidic linkages.
AN 1994:558011 HCAPLUS <<LOGINID::20090331>>
DN 121:158011
OREF 121:28625a,28628a
TI The conformation of the tri- and tetrasaccharide produced in the hydrolysis of barley glucan with the enzyme endo-1,3-1,4-β - glucan 4-glucanohydrolase from Bacillus licheniformis
AU Bernabe, M.; Jimenez-Barbero, J.; Planas, A.
CS Grupo Carbohidratos, Inst. Quimica Organica General, Madrid, 28006, Spain
SO Journal of Carbohydrate Chemistry (1994), 13(5), 799-817
CODEN: JCACDM; ISSN: 0732-8303
DT Journal
LA English

L3 ANSWER 12 OF 19 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Synthesis of (1 → 3), (1 → 4)-β-D-glucan in the Golgi apparatus of maize coleoptiles
AB Membranes of the Golgi apparatus from maize (Zea mays) were used to synthesize in vitro the (1 → 3), (1 → 4)-β-D-glucan (MG) that is unique to the cell wall of the Poaceae. The MG was about 250 kDa and was separated from a much larger (1 → 3)-β-D-glucan (callose) by gel-permeation chromatog. Diagnostic oligosaccharides, released by a sequence-dependent endoglucanase from Bacillus subtilis, were separated by HPLC and GLC. The trisaccharide β-D-Glcp-(1 → 4)-β-D-Glcp-(1 → 3)-D-Glc, the tetrasaccharide [β-D-Glcp(1 → 4)]2-β-D-Glcp-(1 → 3)-D-Glc, and longer cellodextrin (1 → 3)-D-Glc oligosaccharides were synthesized in proportions similar to those found in purified MG. Activated charcoal added during homogenization enhanced synthesis of MG, presumably by removing inhibitory compds. The Golgi apparatus was determined as the site of synthesis by a combination of downward and flotation centrifugations on sucrose step gradients. The rate of synthesis did not reach saturation at up to 10 mM UDP-Glc. Chelators completely abolished synthesis, but synthase activity was restored by addition of either MgCl2 or, to a lesser extent, MnCl2. Synthesis continued for well over 1 h; addition of KOH to raise the pH from 7.2 to 8.0 during the reaction increased the rate of synthesis, which indicates that a transmembrane pH gradient may facilitate synthesis of MG.
AN 1993:405121 HCAPLUS <<LOGINID::20090331>>
DN 119:5121
OREF 119:1071a
TI Synthesis of (1 → 3), (1 → 4)-β-D-glucan in the Golgi apparatus of maize coleoptiles
AU Gibeaut, David M.; Carpita, Nicholas C.
CS Dep. Bot. Plant Pathol., Purdue Univ., West Lafayette, IN, 47907-1155, USA
SO Proceedings of the National Academy of Sciences of the United States of America (1993), 90(9), 3850-4
CODEN: PNASA6; ISSN: 0027-8424
DT Journal
LA English

L3 ANSWER 13 OF 19 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Molecular characterization of cereal β-D-glucans. Structural analysis of oat β-D-glucan and rapid structural evaluation of β-D-glucans from different sources by high-performance liquid chromatography of oligosaccharides released by lichenase
AB Oligosaccharides obtained by the action of (1→3),(1→4)-β-D-glucan-4-glucanohydrolase (lichenase) on the (1→3),(1→4)-β-D-glucan of oats (oat . beta.-glucan) were characterized by methylation anal.

The polysaccharide was confirmed as composed mainly of β-(1→3)-linked cellotriosyl and cellotetraosyl units with a small amount of regions containing 4-8 consecutive (1→4)-linked units. 13C-NMR data confirmed these structural features. The oligosaccharides released by lichenase were analyzed by elution with water from a Bio-Rad HPX-42A high-performance liquid chromatog. column with peak detection by an automated orcinol-sulfuric acid reaction, and the ratio of tri- to tetrasaccharide was determined This ratio defines the major structural repeating units of the cereal (1→3),(1→4)-β-D-glucans and may be determined without prior purification of polysaccharide. The molar ratio of tri- to tetrasaccharide determined for oats was 2.1, for barley 3.2, and for wheat 3.5. No difference was detected between the β-D-glucan from oat brans and the whole groat. In addition, the areas or heights of the major tri- and tetrasaccharide reaction products were used for quantitation by calibration with a β-D-glucan standard

AN 1991:427790 HCAPLUS <<LOGINID::20090331>>
DN 115:27790
OREF 115:4888h,4889a
TI Molecular characterization of cereal β-D-glucans. Structural analysis of oat β-D-glucan and rapid structural evaluation of β-D-glucans from different sources by high-performance liquid chromatography of oligosaccharides released by lichenase
AU Wood, P. J.; Weisz, J.; Blackwell, B. A.
CS Food Res. Cent., Agric. Canada, Ottawa, ON, K1A 0C6, Can.
SO Cereal Chemistry (1991), 68(1), 31-9
CODEN: CECHAF; ISSN: 0009-0352
DT Journal
LA English

L3 ANSWER 14 OF 19 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Fibronectin enhances respiratory burst of phagocytes stimulated by zymosan and immune complexes
AB Plasma fibronectin (FN) has been demonstrated to serve as an opsonin involved in the ingestion of foreign particles by phagocytes. This study concerns the effect of FN exposure on the respiratory burst of normal human peripheral phagocytes, using a luminol-dependent chemiluminescence (CL) assay for measurement of reactive oxygen metabolites generated. FN enhanced, in a concentration-dependent manner, the CL response of circulating monocytes stimulated, probably via β -glucan receptor, with unopsonized zymosan. FN also increased the CL response of phagocytes to fresh serum-opsonized zymosan. When a glycolipid (ceramide pentasaccharide, CPS) incorporated on liposome membranes was used as an antigen, the immune complexes prepared between CPS and human IgG (as antibody) did not induce a CL response, differing from previous reports. Addition of FN to the immune complexes enhanced the CL response of phagocytes. The role of FN in host defense is discussed.
AN 1988:609555 HCAPLUS <<LOGINID::20090331>>
DN 109:209555
OREF 109:34651a,34654a
TI Fibronectin enhances respiratory burst of phagocytes stimulated by zymosan and immune complexes
AU Kuroiwa, A.; Igisu, K.; Yano, T.; Okada, N.; Okada, H.
CS Sch. Med., Fukuoka Univ., Fukuoka, 814-01, Japan
SO Immunology (1988), 65(2), 177-80
CODEN: IMMUAM; ISSN: 0019-2805
DT Journal
LA English

L3 ANSWER 15 OF 19 HCAPLUS COPYRIGHT 2009 ACS on STN

TI Antitumor polysaccharides from P. ostreatus (Fr.) Quel.: isolation and structure of a β -glucan
AB An antitumor glucan (HA β -glucan) was isolated from the neutral polysaccharide fraction of a hot-water extract of the edible mushroom Pleurotus ostreatus. Purification was accomplished by extns. with 20% NaCl solution saturated with thymol and by pptns. with EtOH from DMSO solution The glucan showed marked antitumor activity at a dose of 0.1 mg/kg. It is a highly branched (1 → 3)- β -glucan having an average structure represented by a pentasaccharide segment consisting of 1 nonreducing terminal, 1 3,6-di-O-substituted, and 3 3-mono-O-substituted β-D-glucopyranosyl residues. This structure was confirmed by examining 13C NMR spectra taken at 75.46 MHz.
AN 1985:419890 HCAPLUS <<LOGINID::20090331>>
DN 103:19890
OREF 103:3255a,3258a
TI Antitumor polysaccharides from P. ostreatus (Fr.) Quel.: isolation and structure of a β -glucan
AU Yoshioka, Yuko; Tabeta, Ryoko; Saito, Hazime; Uehara, Nobuaki; Fukuoka, Fumiko
CS Natl. Cancer Cent. Res. Inst., Tokyo, 104, Japan
SO Carbohydrate Research (1985), 140(1), 93-100
CODEN: CRBRAT; ISSN: 0008-6215
DT Journal
LA English

L3 ANSWER 16 OF 19 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Purification of a fungal endo-β-glucanase with high activity on barley β -glucan
AB An endo-β-glucanase was purified from a com. enzyme preparation of fungal origin by (NH4)2SO4 fractionation, ion exchange chromatog., and gel filtration followed by preparative isoelec. focusing. The enzyme was homogeneous in sedimentation equilibrium anal. from which the mol. weight was determined to be 23,500, in agreement with the value 23,653 calculated on the basis of the amino acid composition The enzyme did not contain carbohydrate and a mol. weight of 24,000 estimated by polyacrylamide gel electrophoresis in dodecyl sulfate after 2-mercaptoethanol treatment indicated that it consisted of a single polypeptide chain. It had an isoelec. point of 4.47. The enzyme rapidly decreased the specific viscosity of barley β - glucan with a small concomitant increase in reducing sugar. Its activity toward CM-cellulose, acid-swollen cellulose, and a mixture of cellodextrins was low. The Km for hydrolysis of barley β - glucan and CM-cellulose was 1.8 and 11 mg/mL, resp., the corresponding mol. activities being 7750 and 750 equiv of glucosidic bonds hydrolyzed/min/mol of enzyme. The products of exhaustive hydrolysis of barley β -glucan were 4.3% glucose, 4.2% disaccharide, 72.7% trisaccharide, and 18.8% tetrasaccharide; higher oligomers and polymers were absent. The enzymic activity was completely destroyed by treatment with N-bromosuccinimide but was insensitive to EDTA, SH modifying reagents, glucono-1,5-lactone.
AN 1978:559267 HCAPLUS <<LOGINID::20090331>>
DN 89:159267
OREF 89:24643a,24646a
TI Purification of a fungal endo-β-glucanase with high activity on barley β -glucan
AU Svensson, Birte
CS Dep. Chem., Carlsberg Lab., Copenhagen, Den.
SO Carlsberg Research Communications (1978), 43(2), 103-15
CODEN: CRCODS; ISSN: 0105-1938

DT Journal
LA English

L3 ANSWER 17 OF 19 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Enzymolysis of F-1 β -glucan of naked barley, especially hydrolysis by laminarinase and cellulase
AB F-1 β -glucan from naked barley endosperm, a main component of water-soluble β -glucan, has been subjected to degradation with laminarinase from Bacillus circulans and cellulases from Trichoderma viride and Trametes sanguinea. Laminarinase converts F-1 β -glucan into a trisaccharide, 3-O-β-cellobiosyl-D-glucose, and a tetrasaccharide, 3-O-β-cellotriosyl-D-glucose, as the main products. Overall data show that F-1 β -glucan consists mainly of 2-types of structural sequences; 1 is the trimeric unit in which a single β-(1 → 3) linkage alternates with 2 consecutive β-(1 → 4) linkages, and the other is the tetrameric unit in which a single β-(1 → 3) linkage alternates with 3 consecutive β-(1 → 4) linkages. It is shown that this laminarinase from B. circulans hydrolyzes the glucoside bond of the reducing side of 1,3-linked β-D-glucopyranose residues. T. viride cellulase converted F-1 β -glucan to D-glucose, cellobiose, 4-O-β-laminaribiosyl - D-glucose and 42-O-β-laminaribiosylcellobiose as the main products. From T. sanguinea 4 fractions of cellulase were separated Their hydrolyzing mechanisms against F-1 β -glucan differed from each other. Thus, it was suggested that the hydrolyzing mechanism of cellulase was different when its origin or its fraction in the same origin differed.
AN 1969:509317 HCAPLUS <<LOGINID::20090331>>
DN 71:109317
OREF 71:20325a,20328a
TI Enzymolysis of F-1 β -glucan of naked barley, especially hydrolysis by laminarinase and cellulase
AU Igarashi, Osamu; Fujimaki, Masao; Sakurai, Yosito
CS Ochanomizu Univ., Tokyo, Japan
SO Hakko Kogaku Zasshi (1969), 47(7), 456-62
CODEN: HKZAA2; ISSN: 0367-5963
DT Journal
LA Japanese

L3 ANSWER 18 OF 19 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Enzymic hydrolysis of barley and other β-glucans by a, β-(1 → 4)-glucan hydrolase
AB A barley glucan with 68% of β-(1 → 4)-linkages and 32% of β-(1 → 3)-linkages was exhaustively hydrolyzed with an Aspergillus niger β-(1 → 4)-glucan 4-glucanohydrolase. The hydrolysis products were separated and estimated The lower-mol.-weight products were identified as: glucose, 1.4%; cellobiose, 11.9%; 32-O-β-glucosylcellobiose, 45.0%; a tetrasaccharide, which was a substituted cellobiose, 16.4%. A series of unidentified higher-mol.-weight products (26.5%) were also found. The identity of the products suggests that the A. niger β-(1 → 4)-glucan hydrolase hydrolyzes β-glucosidic linkages joining 4-O-substituted glucose residues. When an enzyme fraction containing the β(1 → 4)-glucan hydrolase and an exo-β-(1 → 3)-glucan hydrolase was used, the same products were found, but the higher-mol.-weight products were observed to have only a transient existence in the hydrolyzate and were virtually absent after prolonged incubation. It is suggested that these oligosaccharides are resistant to attack by β-(1 → 4)-glucan.

hydrolase but are partially hydrolyzed by the exo-β-(1 → 3)-glucan hydrolase and therefore possess one or more (1 → 3)-linked glucose residues at their nonreducing end.
AN 1966:106110 HCAPLUS <<LOGINID::20090331>>
DN 64:106110
OREF 64:20064a-c
TI Enzymic hydrolysis of barley and other β-glucans by a, β-(1 → 4)-glucan hydrolase
AU Clarke, A. E.; Stone, B. A.
CS Univ. Melbourne
SO Biochemical Journal (1966), 99, 582-8
CODEN: BIJOAK; ISSN: 0264-6021
DT Journal
LA English

L3 ANSWER 19 OF 19 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Enzymic degradation of cereal hemicelluloses. III. Oligosaccharide production from β -glucan
AB Barley and oat β -glucan, each of which contain about equal proportions of β-1,3- and β-1,4-linkages, was degraded with endo-β-glucanase and with a mixture of endo- and exo-β-glucanases prepared from barley. The resulting mixture of oligosaccharides was resolved into the sep. compds. by paper chromatog. for 5-6 days with PrOH:H2O (70:30 volume/volume). The Rf values of the individual oligosaccharides were determined on paper with the upper phase of BuOH:AcOH:H2O (40:10:50 volume/volume) (French and Wild, CA 48, 1038e). After elution from the paper, the electrophoretic mobilities of each compound, relative to glucose, was determined on paper with 0.4M Na metabisulfite as the electrolyte (Frahn and Mills, CA 51, 6273g). The relative proportion of β-1,3- and β-1,4-linkages in each compound was estimated by measuring the electrophoretic mobilities in 0.2M Na borate; the β-1,3-linkage near the reducing end increased mobility. Of the 2 disaccharides, 4 trisaccharides, and 8 tetrasaccharides expected, all but 1 tetrasaccharide were obtained. The results with the endo-β-glucanase and exo-β-glucanase were qual. similar. The mol. constitution of the 2 glucans would not be accounted for on the basis of regular alternation of small nos. of the 2 types of linkage.
AN 1961:24680 HCAPLUS <<LOGINID::20090331>>
DN 55:24680
OREF 55:4875b-e
TI Enzymic degradation of cereal hemicelluloses. III. Oligosaccharide production from β -glucan
AU Preece, I. A.; Garg, N. K.; Hoggan, J.
CS Heriot-Watt Coll., Edinburgh, UK
SO Journal of the Institute of Brewing (1960), 66, 331-7
CODEN: JINBAL; ISSN: 0046-9750
DT Journal
LA Unavailable

=> d his

(FILE 'HOME' ENTERED AT 17:33:30 ON 31 MAR 2009)

FILE 'HCAPLUS' ENTERED AT 17:33:47 ON 31 MAR 2009
L1 5522 S (BETA GLUCAN)
L2 4643 S TETRASACCHARIDE OR PENTASACCHARIDE
L3 19 S L1 AND L2

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COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                      ENTRY    SESSION
FULL ESTIMATED COST                                    59.85      60.07

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
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CA SUBSCRIBER PRICE                                   -15.58     -15.58

 SESSION WILL BE HELD FOR 120 MINUTES
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LOGINID:SSPTAEXO1623

PASSWORD:
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FILE 'HCAPLUS' ENTERED AT 17:41:54 ON 31 MAR 2009
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COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
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FULL ESTIMATED COST                                    59.85      60.07

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
                                                      ENTRY    SESSION
CA SUBSCRIBER PRICE                                   -15.58     -15.58

=> file registry
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
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FULL ESTIMATED COST                                    59.85      60.07

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
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CA SUBSCRIBER PRICE                                   -15.58     -15.58

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DICTIONARY FILE UPDATES:  30 MAR 2009  HIGHEST RN 1129871-47-1

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http://www.cas.org/support/stngen/stndoc/properties.html

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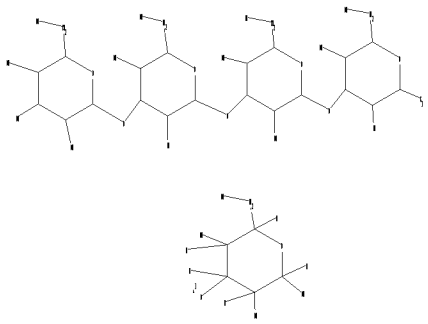

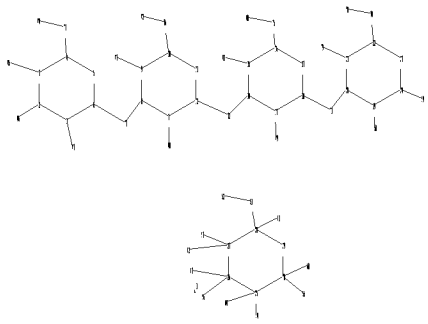

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24 25 26 27 28 29 30
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16-35 18-31 19-50 20-31 21-39 22-34 24-59 25-54 25-64 26-56 26-63 27-53
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29-30
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36-42  37-44  51-52


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L4      STRUCTURE UPLOADED

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SAMPLE SCREEN SEARCH COMPLETED -     2246 TO ITERATE

 89.0% PROCESSED     2000 ITERATIONS                                0 ANSWERS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:        42078 TO    47762
PROJECTED ANSWERS:               0 TO        0

L5            0 SEA SSS SAM L4

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L4 HAS NO ANSWERS
L4              STR

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY -  AVAILABLE VIA OFFLINE PRINT *

Structure attributes must be viewed using STN Express query preparation.
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FULL SCREEN SEARCH COMPLETED -    46288 TO ITERATE

100.0% PROCESSED    46288 ITERATIONS                                  14 ANSWERS
SEARCH TIME: 00.00.01

L6           14 SEA SSS FUL L4

=> d l6 scan

L6   14 ANSWERS   REGISTRY  COPYRIGHT 2009 ACS on STN
IN   D-Glucopyranose, O-α-D-glucopyranosyl-(1→3)-O-α-D-
     glucopyranosyl-(1→3)-O-α-D-glucopyranosyl-(1→3)-O-
     α-D-glucopyranosyl-(1→3)-
MF   C30 H52 O26

Absolute stereochemistry.
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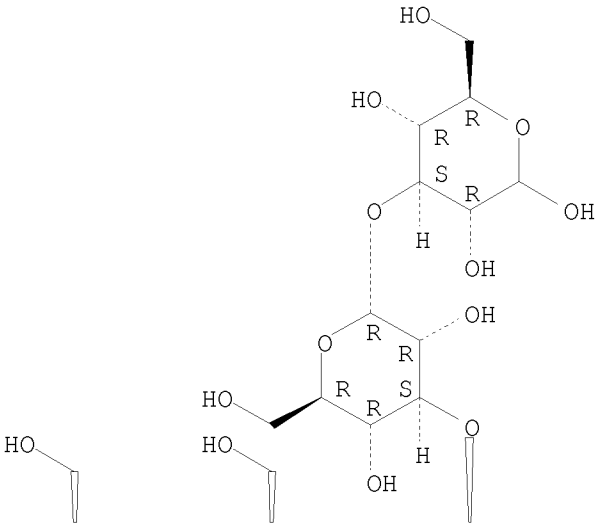
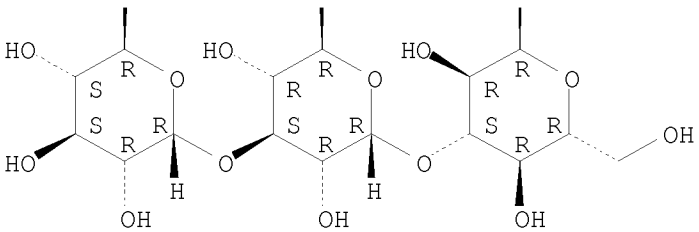
PAGE 1-A



PAGE 2-A

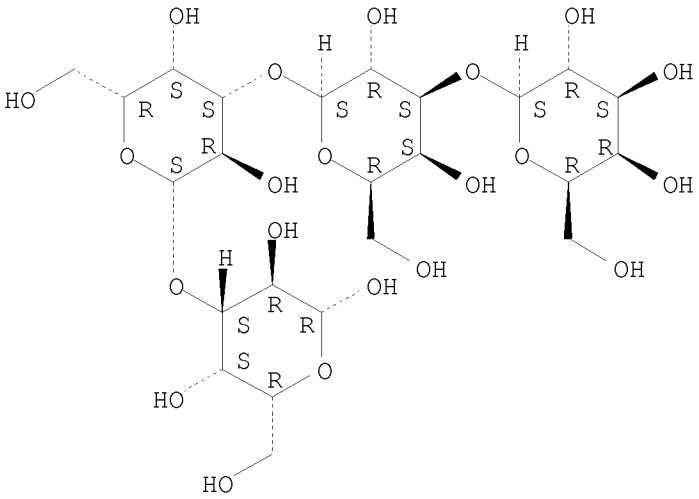


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):4

L6 14 ANSWERS REGISTRY COPYRIGHT 2009 ACS on STN
IN β-D-Galactopyranose, O-β-D-galactopyranosyl-(1→3)-O-β-D-galactopyranosyl-(1→3)-O-β-D-galactopyranosyl-(1→3)-
MF C24 H42 O21

Absolute stereochemistry.

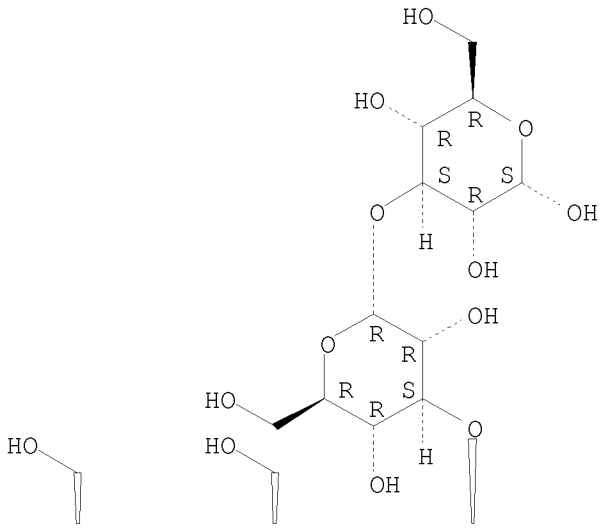


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

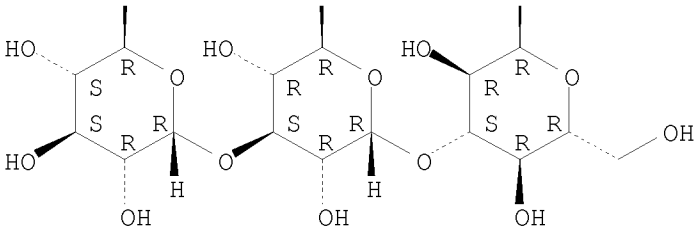
L6 14 ANSWERS REGISTRY COPYRIGHT 2009 ACS on STN
IN α-D-Glucopyranose, O-α-D-glucopyranosyl-(1→3)-O-α-D-glucopyranosyl-(1→3)-O-α-D-glucopyranosyl-(1→3)-O-α-D-glucopyranosyl-(1→3)-
MF C30 H52 O26

Absolute stereochemistry.

PAGE 1-A



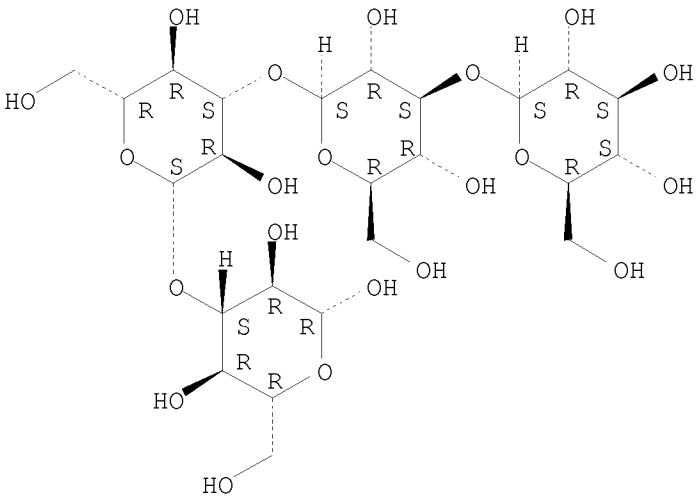
PAGE 2-A



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L6 14 ANSWERS REGISTRY COPYRIGHT 2009 ACS on STN
IN β-D-Glucopyranose, O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)-
MF C24 H42 O21
CI COM

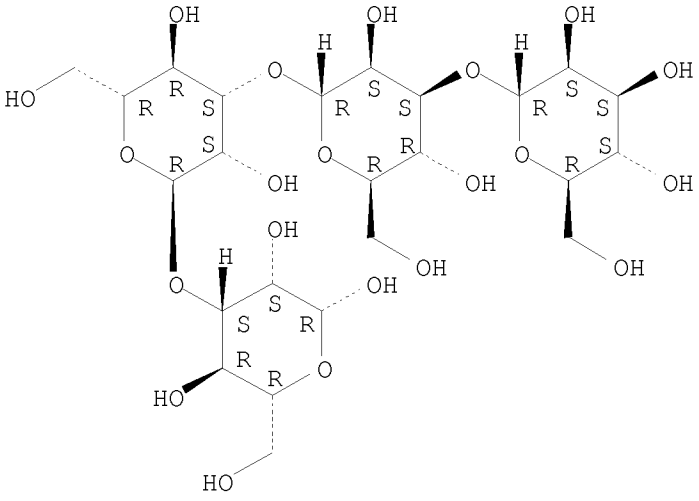
Absolute stereochemistry. Rotation (+).



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L6 14 ANSWERS REGISTRY COPYRIGHT 2009 ACS on STN
IN β-D-Mannopyranose, O-α-D-mannopyranosyl-(1→3)-O-α-D-mannopyranosyl-(1→3)-O-α-D-mannopyranosyl-(1→3)-
MF C24 H42 O21
CI COM

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

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=> file hcaplus
COST IN U.S. DOLLARS SINCE FILE ENTRY TOTAL SESSION

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FULL ESTIMATED COST                                    186.36     246.43

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CA SUBSCRIBER PRICE                                     0.00     -15.58

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FILE COVERS 1907 - 31 Mar 2009  VOL 150 ISS 14
FILE LAST UPDATED: 30 Mar 2009  (20090330/ED)

HCAplus now includes complete International Patent Classification (IPC)
reclassification data for the third quarter of 2008.

CAS Information Use Policies apply and are available at:

http://www.cas.org/legal/infopolicy.html

This file contains CAS Registry Numbers for easy and accurate
substance identification.

=> s l6/thu
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       1107140 THU/RL
L7            2 L6/THU
                  (L6 (L) THU/RL)

=> s cancer or tumor or neoplsstic or neoplasm or antitumor or antineoplastic
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              0 NEOPLSSTIC
         535740 NEOPLASM
         276910 ANTITUMOR
          11869 ANTINEOPLASTIC
L8       928245 CANCER OR TUMOR OR NEOPLSSTIC OR NEOPLASM OR ANTITUMOR OR ANTINE
                OPLASTIC

=> s l6
L9            13 L6

=> s l8 and l9
L10           0 L8 AND L9

=> d l9 1-13 ti abs bib hitstr

L9   ANSWER 1 OF 13  HCAPLUS  COPYRIGHT 2009 ACS on STN
TI   Preparation of β-1,3-glucanase from scallop mid-gut gland drips and
```

its use for production of novel heterooligosaccharides

AB The mid-gut gland of scallop Patinopecten yessoensis has been discarded in scallop processing factories as a fishery waste and various attempts have been made to turn the waste into valuable resources. In the present study, we tried to use mid-gut gland drips from scallop as a source of β-1,3-glucanase. The mid-gut gland drips were collected in a local fishery factory in Yubetsu-cho, Hokkaido Prefecture. β-1,3-Glucanase was purified from the mid-gut gland drips by ammonium sulfate fractionation followed by successive chromatog. on Toyopearl Phenyl-650M and Toyopearl DEAE-650M. The scallop β-1,3-glucanase, named PyLam38 in the present study, showed a mol. mass of approx. 38 kDa by sodium dodecylsulfate-polyacrylamide gel electrophoresis, and hydrolyzed laminarin, a β-1,3-glucan from Laminaria sp., producing laminaribiose and glucose with an optimal pH and temperature of 6.0° and 45°, resp. PyLam38 exhibited high transglycosylation activity toward various acceptor substrates such as monosaccharides, alcs. and xylooligosaccharides. Thus, PyLam38 was found to be useful for the production of various novel heterooligosaccharides consisting of laminarioligosaccharides and various acceptors.

AN 2008:1291751 HCAPLUS <<LOGINID::20090331>>
DN 150:76132

TI Preparation of β-1,3-glucanase from scallop mid-gut gland drips and its use for production of novel heterooligosaccharides

AU Kumagai, Yuya; Inoue, Akira; Tanaka, Hiroyuki; Ojima, Takao
CS Laboratory of Marine Biotechnology and Microbiology, Graduate School of Fisheries Sciences, Hokkaido University, Hakodate, Hokkaido, 041-8611, Japan

SO Fisheries Science (Richmond, Australia) (2008), 74(5), 1127-1136
CODEN: FSCIEH; ISSN: 0919-9268
PB Wiley-Blackwell
DT Journal
LA English

IT 1093762-67-4P
RL: BPN (Biosynthetic preparation); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation)
(preparation of β-1,3-glucanase from scallop mid-gut gland drips and its use for production of novel heterooligosaccharides)

RN 1093762-67-4 HCAPLUS
CN INDEX NAME NOT YET ASSIGNED

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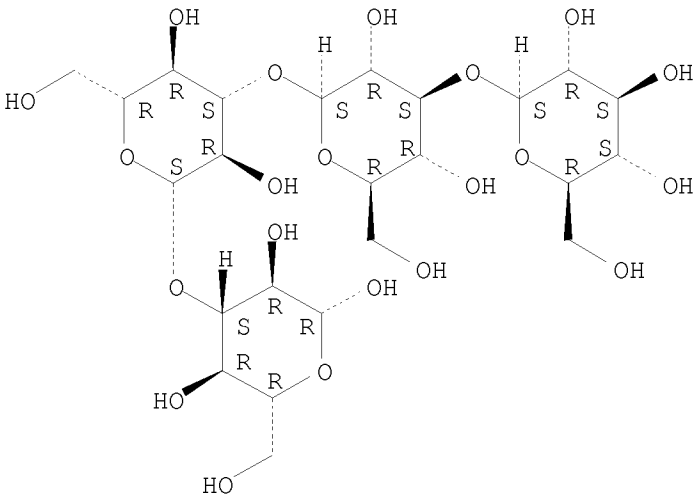
CRN 83419-04-9
CMF C24 H42 O21

Absolute stereochemistry. Rotation (+).



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CRN 58-86-6
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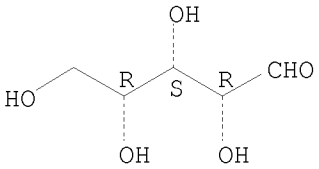
Absolute stereochemistry.



RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 2 OF 13 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Oligo-β(1→3)glucans with an inhibitory effect on allergic reactions, and use for the treatment of allergies
AB The invention relates to the preventive, curative, and/or palliative treatment of allergies. The invention more particularly relates to compns., e.g. a drug, food, or nutraceutical composition, including at least one β(1→3)-glucan oligosaccharide having a principal chain of d.p. from 3-6, known as oligo-β(1→3)-glucan, for the prevention and/or inhibition of allergic reactions. In addition to inhibition of IgE production the oligo-β(1→3)-glucans of the invention advantageously stimulate the liberation of IgA and secretion and physiol. activity of interferon γ and interleukin 10.
AN 2008:830611 HCAPLUS <<LOGINID::20090331>>
DN 149:119621
TI Oligo-β(1→3)glucans with an inhibitory effect on allergic reactions, and use for the treatment of allergies
IN Degre, Michel Francois; Bulone, Vincent; Dombrowsky, Linda
PA Bio Serae Laboratoires SA, Fr.
SO PCT Int. Appl., 34pp.
CODEN: PIXXD2
DT Patent

LA French
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2008081111	A1	20080710	WO 2007-FR1996	20071205
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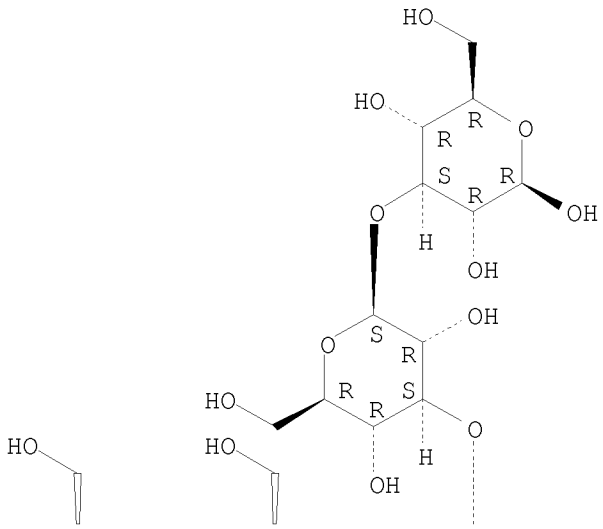
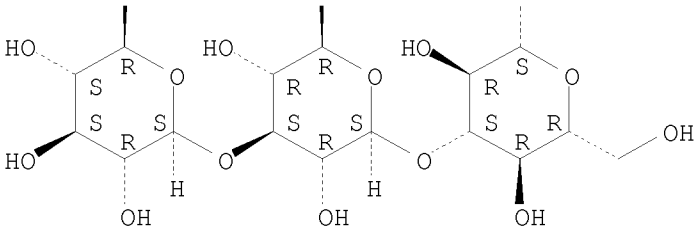
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	FR 2909553	A1	20080613	FR 2006-10733	20061208
	FR 2909553	B1	20090306		
PRAI	FR 2006-10733	A	20061208		

IT 83409-48-7P 83419-04-9P
RL: FMU (Formation, unclassified); PAC (Pharmacological activity); PUR (Purification or recovery); THU (Therapeutic use); BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation); USES (Uses)
(oligo-β(1→3)glucans for treatment of allergies)
RN 83409-48-7 HCAPLUS
CN β-D-Glucopyranose, O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)- (CA INDEX NAME)

Absolute stereochemistry.





RN 83419-04-9 HCAPLUS
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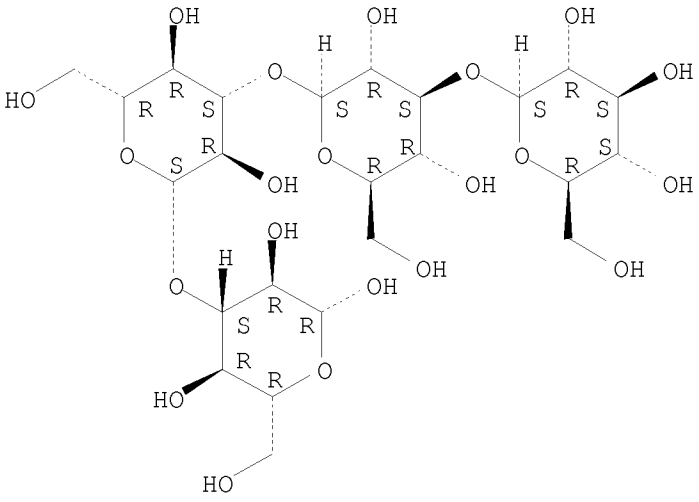
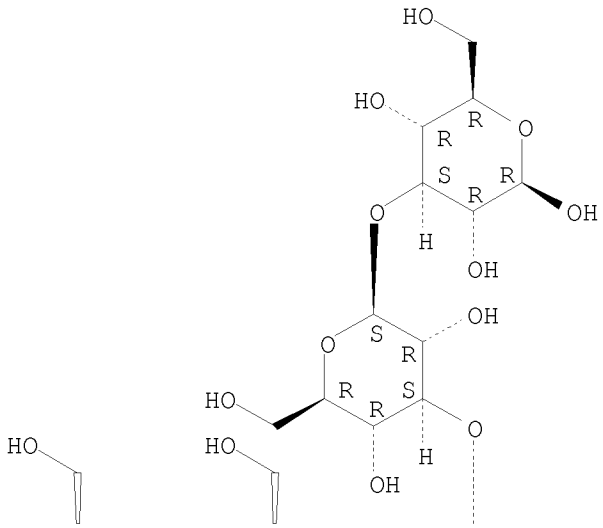
Absolute stereochemistry. Rotation (+).



IT 83409-48-7D, branched 83419-04-9D, branched
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(oligo-β(1→3)glucans for treatment of allergies)
RN 83409-48-7 HCAPLUS
CN β-D-Glucopyranose, O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)- (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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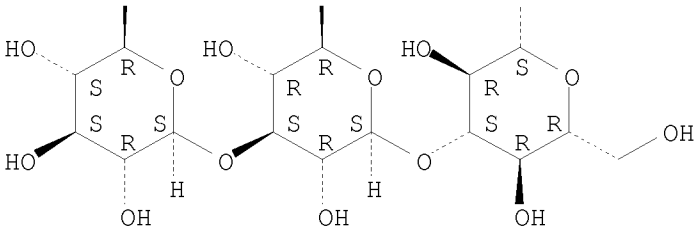

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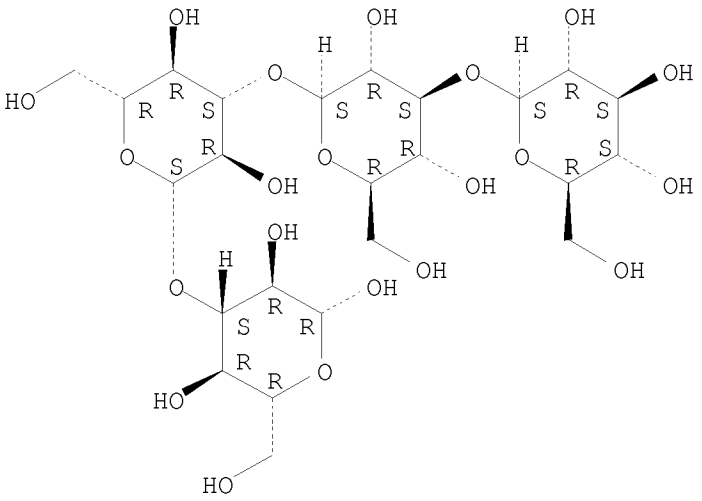
CN β-D-Glucopyranose, O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)- (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 3 OF 13 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Oligo-β(1→3)glucans with an inhibitory effect on allergic reactions, and use for the treatment of allergies
AB The invention relates to the preventive, curative, and/or palliative treatment of allergies. The invention more particularly relates to compns., e.g. a drug, food, or nutraceutical composition, including at least one β(1→3)-glucan oligosaccharide having a principal chain of d.p. from 3-6, known as oligo-β(1→3)-glucan, for the prevention and/or inhibition of allergic reactions. In addition to inhibition of IgE production the oligo-β(1→3)-glucans of the invention advantageously stimulate the liberation of IgA and secretion and physiol. activity of interferon γ and interleukin 10.
AN 2008:708537 HCAPLUS <<LOGINID::20090331>>
DN 149:45220
TI Oligo-β(1→3)glucans with an inhibitory effect on allergic reactions, and use for the treatment of allergies
IN Degre, Michel Francois; Bulone, Vincent; Guentas Dombrowsky, Linda
PA Bio Serae Laboratoires, Fr.
SO Fr. Demande, 32 pp.
CODEN: FRXXBL
DT Patent
LA French
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	FR 2909553	A1	20080613	FR 2006-10733	20061208
	FR 2909553	B1	20090306		
	WO 2008081111	A1	20080710	WO 2007-FR1996	20071205

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RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW,

GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRAI FR 2006-10733 A 20061208

IT 83409-48-7P 83419-04-9P
RL: FMU (Formation, unclassified); PAC (Pharmacological activity); PUR (Purification or recovery); THU (Therapeutic use); BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation); USES (Uses)
(oligo-β(1→3)glucans for treatment of allergies)

RN 83409-48-7 HCAPLUS

CN β-D-Glucopyranose, O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)- (CA INDEX NAME)

Absolute stereochemistry.

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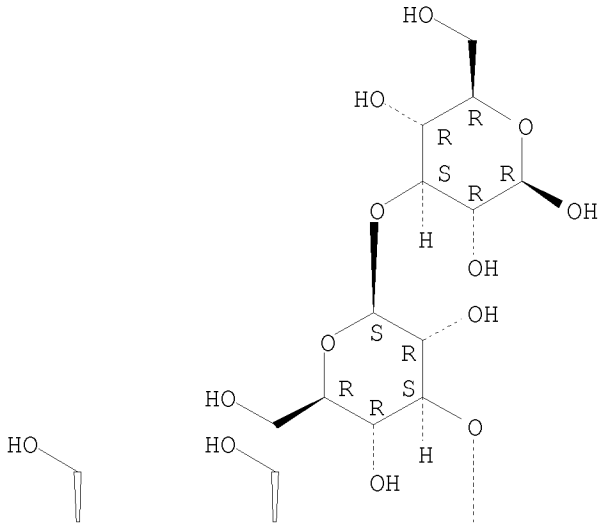

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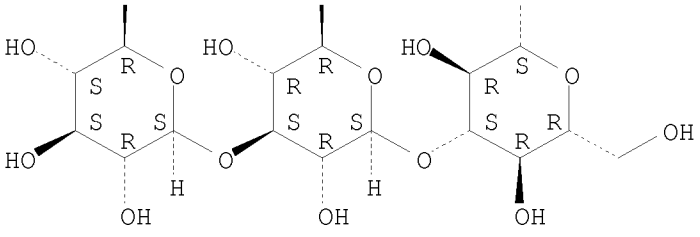

RN 83419-04-9 HCAPLUS

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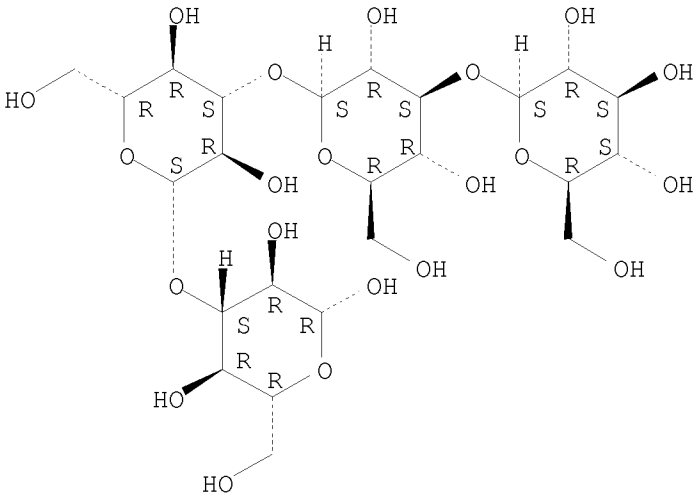
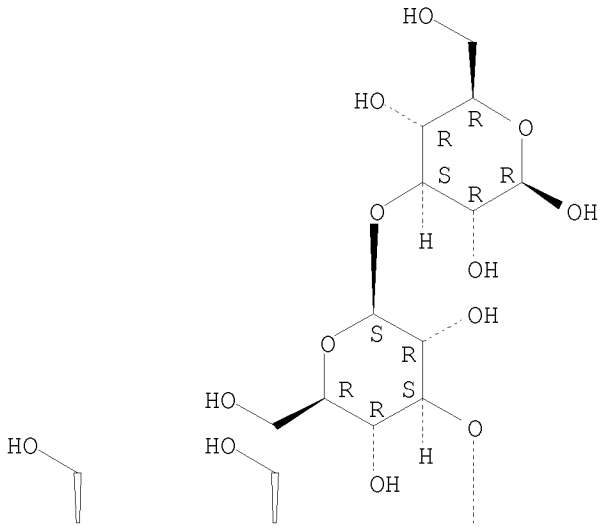
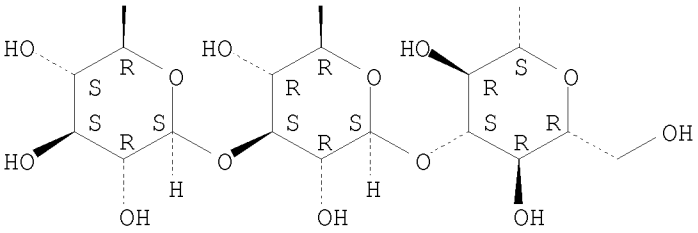
Absolute stereochemistry. Rotation (+).



IT 83409-48-7D, branched 83419-04-9D, branched
    RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
    (oligo-β(1→3)glucans for treatment of allergies)
RN 83409-48-7 HCAPLUS
CN β-D-Glucopyranose, O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)- (CA INDEX NAME)

Absolute stereochemistry.





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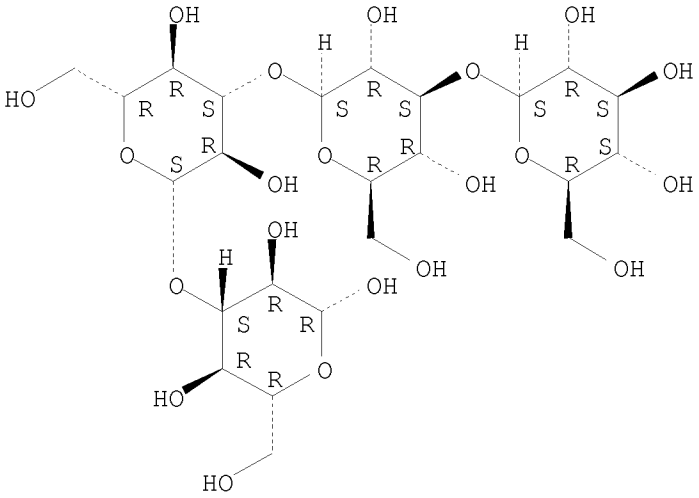
CN β-D-Glucopyranose, O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)- (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 4 OF 13 HCAPLUS COPYRIGHT 2009 ACS on STN
TI An Exo-β-1,3-galactanase Having a Novel β-1,3-Galactan-binding Module from Phanerochaete chrysosporium
AB An exo-β-1,3-galactanase gene from Phanerochaete chrysosporium has been cloned, sequenced, and expressed in Pichia pastoris. The complete amino acid sequence of the exo-β-1,3-galactanase indicated that the enzyme consists of an N-terminal catalytic module with similarity to glycoside hydrolase family 43 and an addnl. unknown functional domain similar to carbohydrate-binding module family 6 (CBM6) in the C-terminal region. The mol. mass of the recombinant enzyme was estimated as 55 kDa based on SDS-PAGE. The enzyme showed reactivity only toward β-1,3-linked galactosyl oligosaccharides and polysaccharide as substrates but did not hydrolyze β-1,4-linked galactooligosaccharides, β-1,6-linked galactooligosaccharides, pectic galactan, larch arabinogalactan, arabinan, gum arabic, debranched arabinan, laminarin, soluble birchwood xylan, or soluble oat spelled xylan. The enzyme also did not hydrolyze

β-1,3-galactosyl galactosaminide, β-1,3-galactosyl glucosaminide, or β-1,3-galactosyl arabinofuranoside, suggesting that it specifically cleaves the internal β-1,3-linkage of two galactosyl residues. High performance liquid chromatog. anal. of the hydrolysis products showed that the enzyme produced galactose from β-1,3-galactan in an exo-acting manner. However, no activity toward p-nitrophenyl β-galactopyranoside was detected. When incubated with arabinogalactan proteins, the enzyme produced oligosaccharides together with galactose, suggesting that it is able to bypass β-1,6-linked galactosyl side chains. The C-terminal CBM6 did not show any affinity for known substrates of CBM6 such as xylan, cellulose, and β-1,3-glucan, although it bound β-1,3-galactan when analyzed by affinity electrophoresis. Frontal affinity chromatog. for the CBM6 moiety using several kinds of terminal galactose-containing oligosaccharides as the analytes clearly indicated that the CBM6 specifically interacted with oligosaccharides containing a β-1,3-galactobiose moiety. When the d.p. of galactose oligomers was increased, the binding affinity of the CBM6 showed no marked change.

AN 2005:578720 HCAPLUS <<LOGINID::20090331>>

DN 143:243949

TI An Exo-β-1,3-galactanase Having a Novel β-1,3-Galactan-binding Module from Phanerochaete chrysosporium

AU Ichinose, Hitomi; Yoshida, Makoto; Kotake, Toshihisa; Kuno, Atsushi; Igarashi, Kiyohiko; Tsumuraya, Yoichi; Samejima, Masahiro; Hirabayashi, Jun; Kobayashi, Hideyuki; Kaneko, Satoshi

CS Biological Function Division, National Food Research Institute, Tsukuba, Ibaraki, 305-8642, Japan

SO Journal of Biological Chemistry (2005), 280(27), 25820-25829
CODEN: JBCHA3; ISSN: 0021-9258

PB American Society for Biochemistry and Molecular Biology

DT Journal

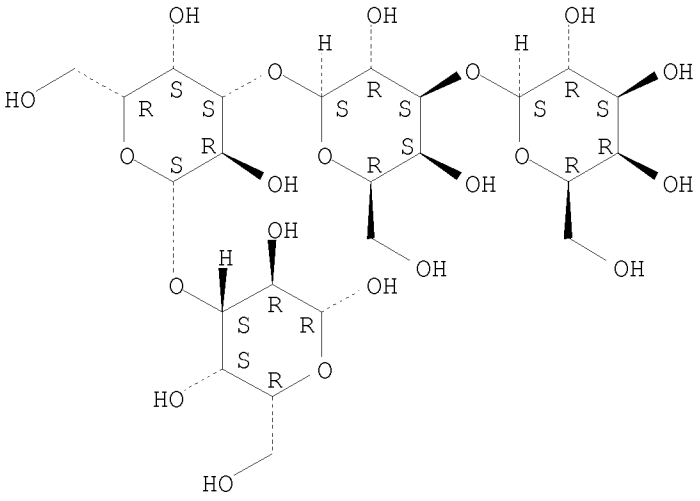
LA English

IT 863397-96-0 863397-97-1
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(exo-β-1,3-galactanase having novel β-1,3-galactan-binding module from Phanerochaete chrysosporium)

RN 863397-96-0 HCAPLUS

CN β-D-Galactopyranose, O-β-D-galactopyranosyl-(1→3)-O-β-D-galactopyranosyl-(1→3)-O-β-D-galactopyranosyl-(1→3)- (CA INDEX NAME)

Absolute stereochemistry.



RN 863397-97-1 HCAPLUS
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Absolute stereochemistry.

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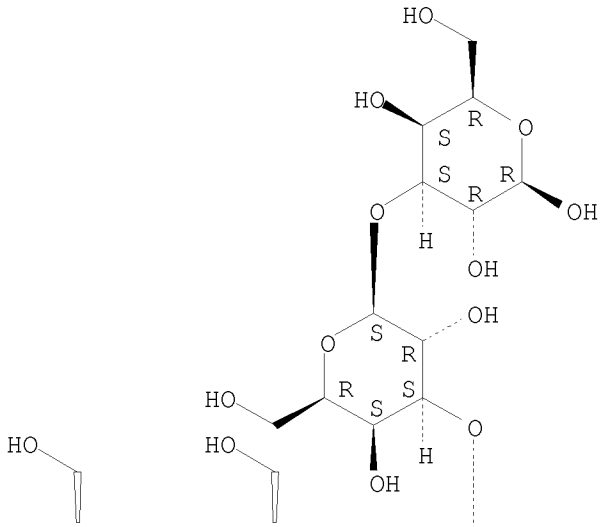

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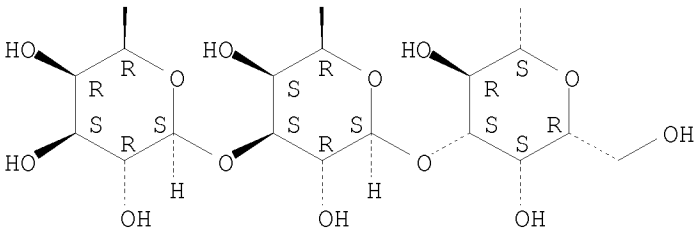


RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 5 OF 13 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Isolation, enzymatic properties, and mode of action of an exo-1,3-β-glucanase from Trichoderma viride
AB An exo-1,3-β-glucanase has been isolated from cultural filtrate of Trichoderma viride AZ36. The N-terminal sequence of the purified enzyme (m = 61±1 kDa) showed no significant homol. to other known glucanases. The 1,3-β-glucanase displayed high activity against laminarins, curdlan, and 1,3-β-oligoglucosides, but acted slowly on

1,3-1,4-β-oligoglucosides. No significant activity was detected against high mol. mass 1,3-1,4-β-glucans. The enzyme carried out hydrolysis with inversion of the anomeric configuration. Whereas only glucose was released from the nonreducing terminus during hydrolysis of 1,3-β-oligoglucosides, transient accumulation of gentiobiose was observed during hydrolysis of laminarins. The gentiobiose was subsequently degraded to glucose. The Michaelis consts. Km and Vmax have been determined for the hydrolysis of 1,3-β-oligoglucosides with ds.p. ranging from 2 to 6. Based on these data, binding affinities for subsites were calculated Substrate binding site of the enzyme contained at least five binding sites for sugar residues.

AN 2001:905987 HCAPLUS <<LOGINID::20090331>>

DN 136:163198

TI Isolation, enzymatic properties, and mode of action of an exo-1,3-β-glucanase from Trichoderma viride

AU Kulminskaya, Anna A.; Thomsen, Karl K.; Shabalin, Konstantin A.; Sidorenko, Irina A.; Eneyskaya, Elena V.; Savel'ev, Andrew N.; Neustroev, Kirill N.

CS Petersburg Nuclear Physics Institute, Russian Academy of Science, Russia

SO European Journal of Biochemistry (2001), 268(23), 6123-6131
CODEN: EJBCAI; ISSN: 0014-2956

PB Blackwell Science Ltd.

DT Journal

LA English

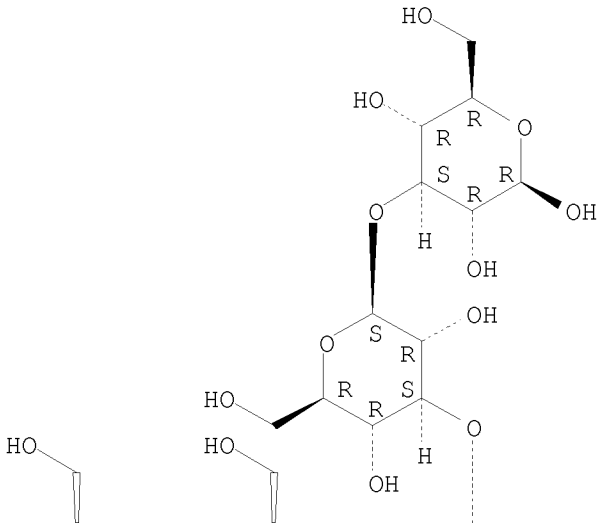
IT 83409-48-7
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(enzymic properties and mode of action of exo-1,3-β-glucanase from Trichoderma viride)

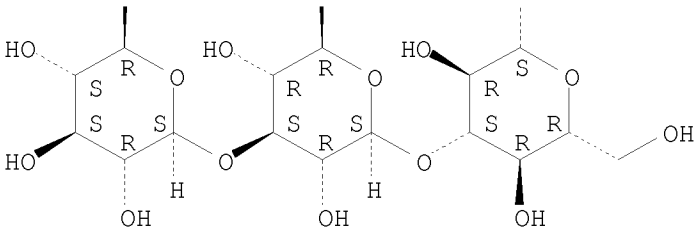
RN 83409-48-7 HCAPLUS

CN β-D-Glucopyranose, O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)- (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



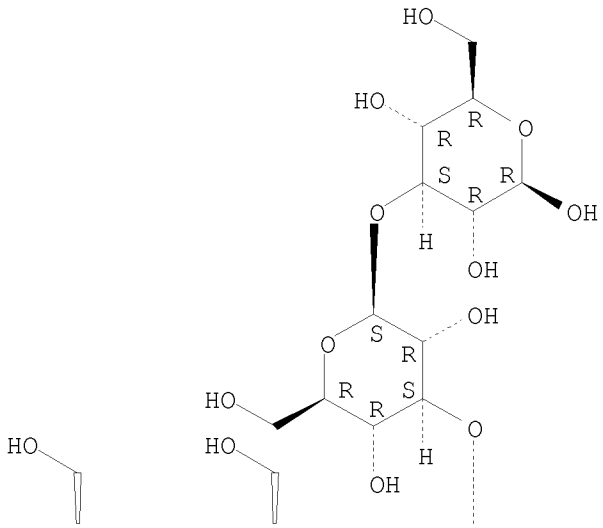


RE.CNT 59 THERE ARE 59 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

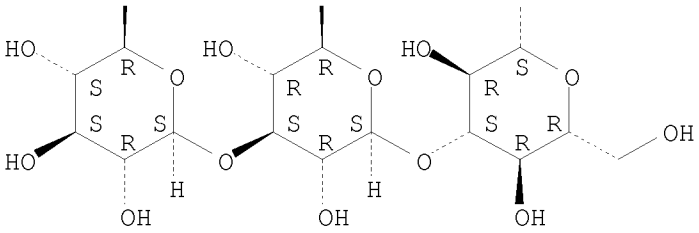
L9 ANSWER 6 OF 13 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Novel oligosaccharide binding to the cerium(IV) bis(porphyrinate) double decker: Effective amplification of a binding signal through positive homotropic allosterism
AB It has been demonstrated that a Ce(IV) bis(porphyrinate) double decker scaffold bearing two pairs of boronic acid groups is a scaffold for the effective binding of oligosaccharides (maltooligosaccharides and laminarioligosaccharides) in aqueous media to form 1:2 saccharide complexes, and shows pos., homotropic allosterism with Hill coeffs. of 1.6-2.0. Significant binding of oligosaccharides is nearly impossible without the aid of pos. homotropic allosterism.
AN 2000:818983 HCAPLUS <<LOGINID::20090331>>
DN 134:101091
TI Novel oligosaccharide binding to the cerium(IV) bis(porphyrinate) double decker: Effective amplification of a binding signal through positive homotropic allosterism
AU Sugasaki, Atsushi; Ikeda, Masato; Takeuchi, Masayuki; Shinkai, Seiji
CS Dep. Chem. Biochemistry, Kyushu Univ., Fukuoka, 812-8581, Japan
SO Angewandte Chemie, International Edition (2000), 39(21), 3839-3842
CODEN: ACIEF5; ISSN: 1433-7851
PB Wiley-VCH Verlag GmbH
DT Journal
LA English
IT 83409-48-7 83419-04-9
RL: PRP (Properties)
(allosterism of oligosaccharides by a cerium bis(porphyrinate) boronic acid structure)
RN 83409-48-7 HCAPLUS
CN β-D-Glucopyranose, O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)- (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A

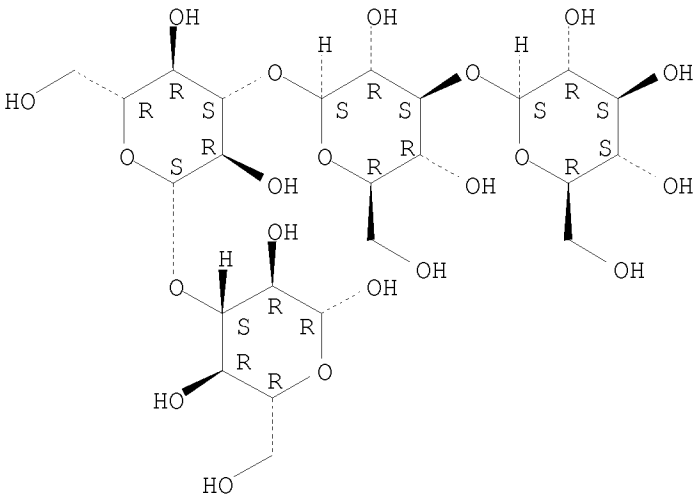


PAGE 2-A



RN 83419-04-9 HCAPLUS
CN β-D-Glucopyranose, O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)- (CA INDEX NAME)

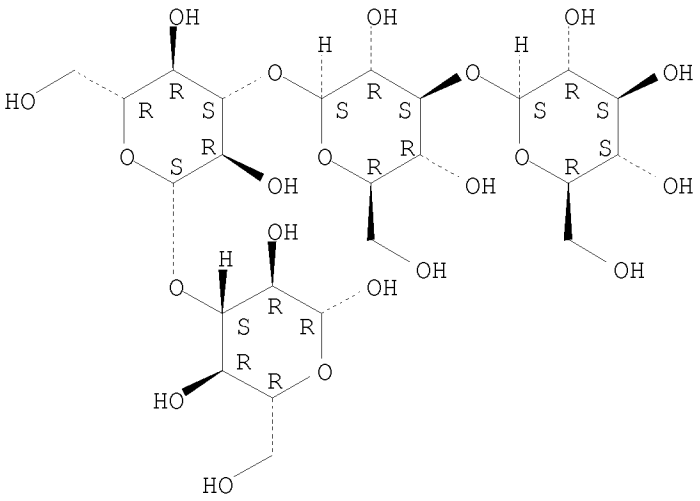
Absolute stereochemistry. Rotation (+).



RE.CNT 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 7 OF 13 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Transglycosidation activity of Bacillus 1,3-1,4-β-D-glucan 4-glucanohydrolases. Enzymic preparation of alternate 1,3-1,4-β-D-gluco-oligosaccharides
AB The title enzyme from Bacillus licheniformis has been shown to catalyze the effective auto-condensation of β-laminaribiosyl fluoride, and lead to alternate 1,3-1,4-β-D-glucotetraose and -glucohexaose products. The transglycosylation using the same donor and Me β-laminaribioside as acceptor leads to the Me 4-O-β-laminaribiosyl-β-laminaribioside in 40% overall yield.
AN 1997:589523 HCAPLUS <<LOGINID::20090331>>
DN 127:248307
OREF 127:48525a,48528a
TI Transglycosidation activity of Bacillus 1,3-1,4-β-D-glucan 4-glucanohydrolases. Enzymic preparation of alternate 1,3-1,4-β-D-gluco-oligosaccharides
AU Viladot, Josep-Lluis; Moreau, Vincent; Planas, Antoni; Driguez, Hugues
CS Laboratori de Bioquimica, Institut Quimic de Sarria, Universitat Ramon Llull, Barcelona, 08017, Spain
SO Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1997), (16), 2383-2387
CODEN: JCPRB4; ISSN: 0300-922X
PB Royal Society of Chemistry
DT Journal
LA English
OS CASREACT 127:248307
IT 83419-04-9P
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(enzymic preparation of β-gluco-oligosaccharides via glucanohydrolase-catalyzed)
RN 83419-04-9 HCAPLUS
CN β-D-Glucopyranose, O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)- (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



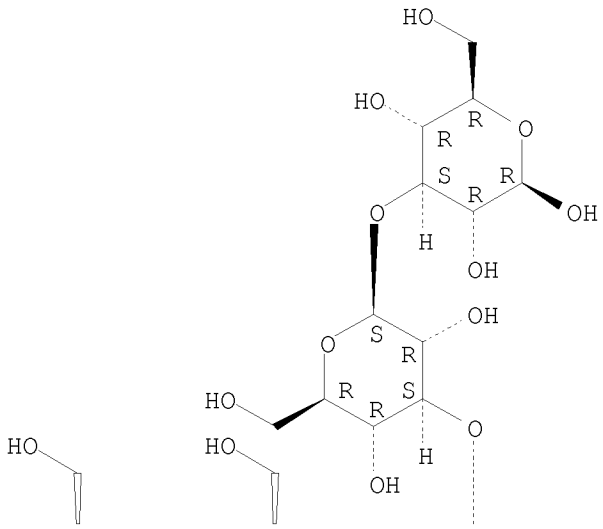
RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 8 OF 13 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Synthesis of Sulfated Alkyl Laminara-Oligosaccharides Having Potent Anti-HIV Activity and the Relationship between Structure and Biological Activities
AB The synthesis of potently anti-HIV-active sulfated alkyl laminara-oligosaccharides composed of glucosidic residues of 5-9 was investigated. The anti-HIV activity and the anticoagulant activity of these sulfated alkyl laminara-oligosaccharides were assessed. The synthesis and separation of resp. laminara-oligosaccharides were accomplished in a route starting from acetolysis and hydrolysis of curdlan followed by HPLC. Alkyl oligosaccharides were synthesized using stannic tetrachloride as a Lewis acid catalyst, and then sulfation was carried out with the sulfur trioxide-pyridine complex after deacetylation. Sulfated dodecyl laminarapentoside through laminaranonoside showed almost the same anti-HIV activity. Although no cytotoxicity was detected on a series of dodecyl compds., low-level cytotoxicity appeared with a series of octadecyl compds. On the other hand, the anticoagulant activity increased as the number of sugar units increased from 5 to 9.
AN 1995:131134 HCAPLUS <<LOGINID::20090331>>
DN 122:265867
OREF 122:48553a,48556a
TI Synthesis of Sulfated Alkyl Laminara-Oligosaccharides Having Potent Anti-HIV Activity and the Relationship between Structure and Biological Activities
AU Katsuraya, Kaname; Shoji, Tadao; Inazawa, Kazuhiko; Nakashima, Hideki; Yamamoto, Naoki; Uryu, Toshiyuki
CS Institute of Industrial Science, University of Tokyo, Tokyo, 106, Japan
SO Macromolecules (1994), 27(23), 6695-9
CODEN: MAMOBX; ISSN: 0024-9297
DT Journal
LA English
IT 83409-48-7P 162680-76-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and antiviral and anticoagulant activities of sulfated alkyl laminara-oligosaccharides)
RN 83409-48-7 HCAPLUS
CN β-D-Glucopyranose, O-β-D-glucopyranosyl-(1→3)-O-β-D-

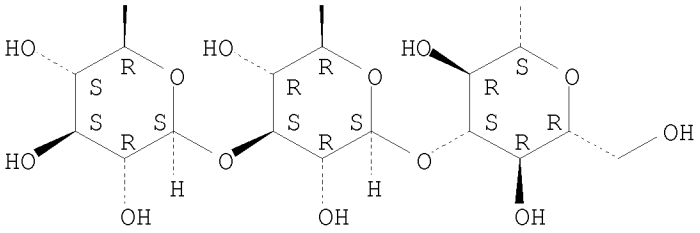
glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)-O-
β-D-glucopyranosyl-(1→3)- (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



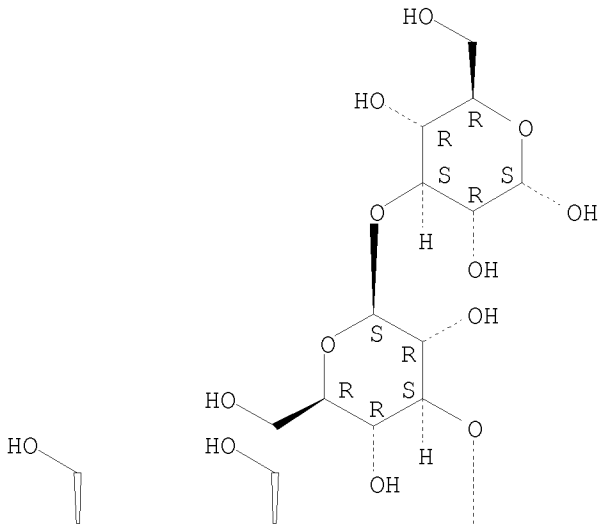
PAGE 2-A



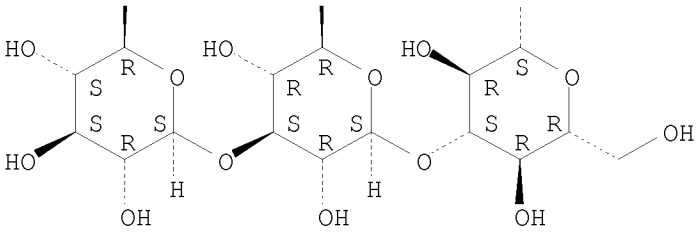
RN 162680-76-4 HCAPLUS
CN α-D-Glucopyranose, O-β-D-glucopyranosyl-(1→3)-O-β-D-
glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)-O-
β-D-glucopyranosyl-(1→3)- (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 2-A

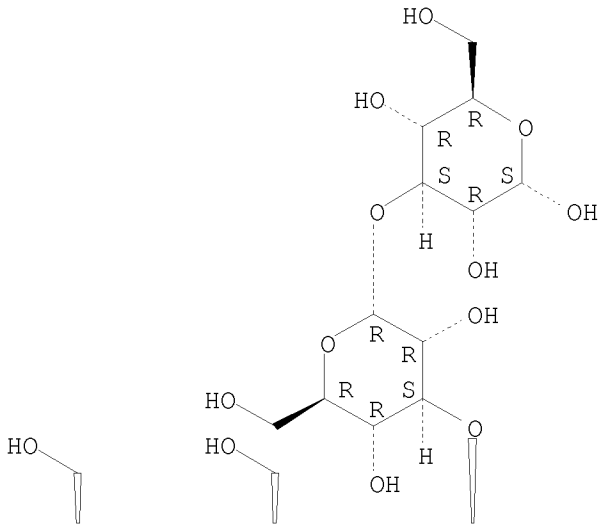


L9 ANSWER 9 OF 13 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Failure of oligosaccaride MOPC-104E IgM complexes to bind C1q and to activate C1
AB The capacity of anti-dextran MOPC-104E IgM to bind and activate the first complement component (C1) in the presence of various specific monovalent oligosaccharides was investigated. ELISA revealed that IgM-oligosaccharide complexes saturated up to 97% with ligands were not capable of binding C1q under physiol. conditions. Nor was any activation of reconstituted C1 observed Thus, occupation of the single IgM binding sites by a monovalent ligand is not sufficient to induce a signal for complement activation.
AN 1987:634459 HCAPLUS <<LOGINID::20090331>>
DN 107:234459
OREF 107:37655a,37658a
TI Failure of oligosaccaride MOPC-104E IgM complexes to bind C1q and to activate C1
AU Weiner, Erika M.
CS Med. Fac., RWTH, Aachen, D-5100, Fed. Rep. Ger.

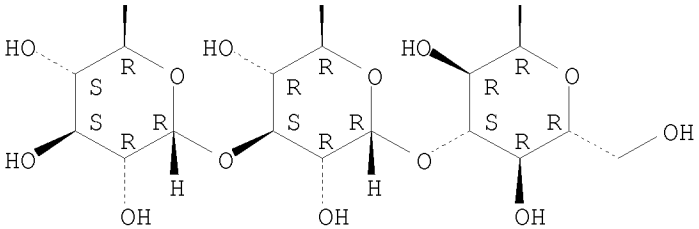
SO Biochemistry International (1987), 15(1), 163-8
CODEN: BIINDF; ISSN: 0158-5231
DT Journal
LA English
IT 111864-52-9D, IgM complexes 111955-87-4D, IgM complexes
RL: BIOL (Biological study)
(complement C1 activation and C1q fixation response to)
RN 111864-52-9 HCAPLUS
CN α-D-Glucopyranose, O-α-D-glucopyranosyl-(1→3)-O-α-D-glucopyranosyl-(1→3)-O-α-D-glucopyranosyl-(1→3)-O-α-D-glucopyranosyl-(1→3)- (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A

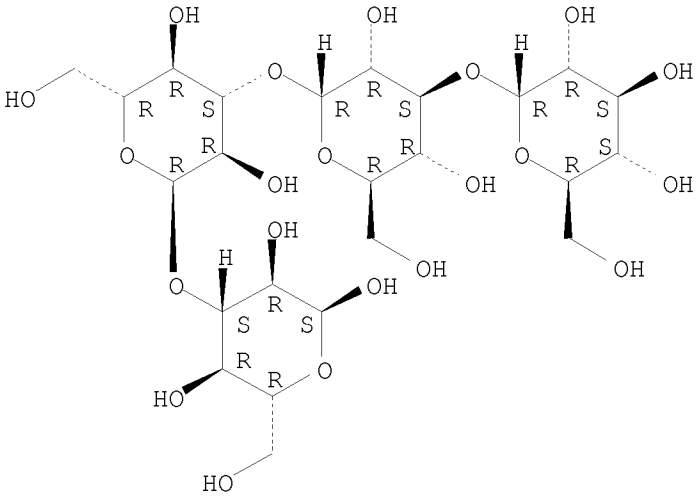


PAGE 2-A

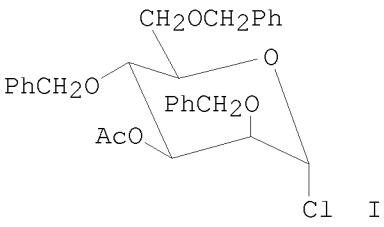


RN 111955-87-4 HCAPLUS
CN α-D-Glucopyranose, O-α-D-glucopyranosyl-(1→3)-O-α-D-glucopyranosyl-(1→3)-O-α-D-glucopyranosyl-(1→3)- (CA INDEX NAME)

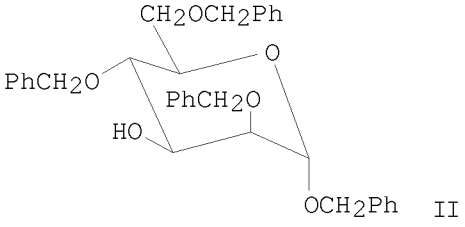
Absolute stereochemistry.



L9 ANSWER 10 OF 13 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Synthetic studies on cell-surface glycans. Part XXXIII. Synthesis of a model linear mannohexaose for the backbone structure of fruit body polysaccharide of Tremella fuciformis and Dictyophora indusiata Fisch
GI



I

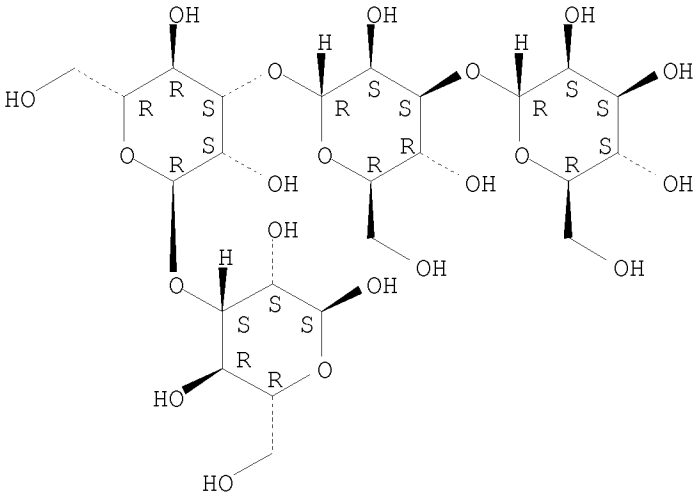


II

AB Linear α-(1→3)-D-mannohexaose [α-D-mannopyranosyl-[(1→3)-α-D-mannopyranosyl]4-(1→3)-α-D-mannopyranose] was prepared by a stepwise strategy employing monosaccharide synthons I and II as the mannosyl donor and acceptor, resp. II was prepared from benzyl α-D-mannopyranoside in several steps. The 13C-NMR data for the synthetic mannohexaose agreed well with that for the natural α-(1→3)-D-mannan from D. indusiata.
AN 1985:406636 HCAPLUS <<LOGINID::20090331>>
DN 103:6636
OREF 103:1203a,1206a
TI Synthetic studies on cell-surface glycans. Part XXXIII. Synthesis of a model linear mannohexaose for the backbone structure of fruit body polysaccharide of Tremella fuciformis and Dictyophora indusiata Fisch
AU Ogawa, Tomoya; Yamamoto, Hisao
CS Inst. Phys. Chem. Res., Wako, 351, Japan
SO Agricultural and Biological Chemistry (1985), 49(2), 475-82
CODEN: ABCHA6; ISSN: 0002-1369
DT Journal

LA English
IT 93340-81-9P 93340-84-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 93340-81-9 HCAPLUS
CN α-D-Mannopyranose, O-α-D-mannopyranosyl-(1→3)-O-α-D-mannopyranosyl-(1→3)-O-α-D-mannopyranosyl-(1→3)- (CA INDEX NAME)

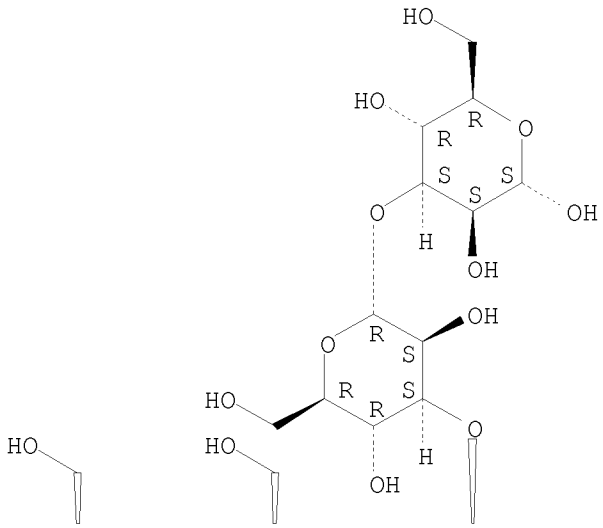
Absolute stereochemistry.



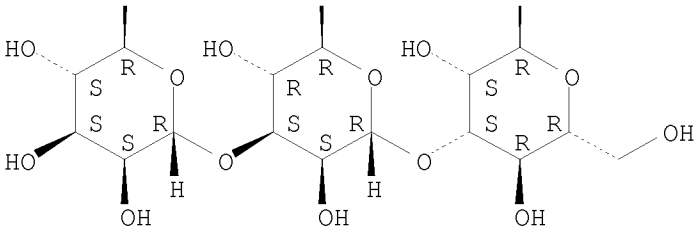
RN 93340-84-2 HCAPLUS
CN α-D-Mannopyranose, O-α-D-mannopyranosyl-(1→3)-O-α-D-mannopyranosyl-(1→3)-O-α-D-mannopyranosyl-(1→3)-O-α-D-mannopyranosyl-(1→3)- (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 2-A



L9 ANSWER 11 OF 13 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Oligomannosides
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Oligomannosides I (R = H, PhCH2, R1 = H, Ac, n = 1-5) were prepared Thus, treating 100 g α-D-mannose with 500 mL CH2:CHCH2OH 9 days at room temperature gave 172 g allyl α-D-mannopyranoside which was tritylated by 180 g Ph3CCl in 100 mL pyridine to give 95% 6-O-trityl derivative followed by allylation with 10 mL CH2:CHCH2Br in 50 mL PhMe under phase-transfer conditions to give allyl 3-O-allyl-6-O-trityl-α-D-mannopyranoside. The latter (350 mg) was detritylated by 20 mL AcOH followed by benzylation with 9 mL PhCH2Br to give 87% allyl 2,4,6-tri-O-benzyl-3-O-allyl-α-D-mannopyranoside followed by

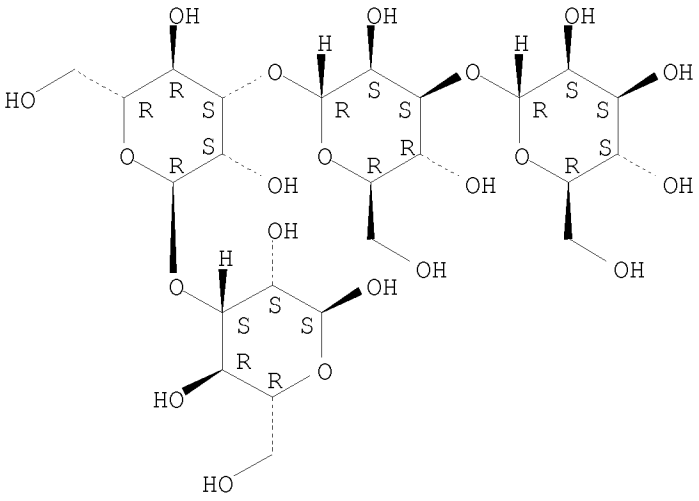
deallylation to give 44% II (R2 = OH, R3 = H) (III). Acetylation of 1 g III by 30 mL Ac2O-pyridine (1:2) gave 1.1 g (93%) II (R2 = AcO, R3 = Ac) which (100 mg) in 10 mL CH2Cl2 was chlorinated by HCl to give II (R2 = Cl, R3 = Ac) (IV). Glycosidation of 1.65 g V in 20 mL ClCH2CH2Cl by 970 mg IV 2 days at room temperature gave 2.35 g (99%) I (R = Ac, R1 = PhCH2, n = 2).

AN 1985:7028 HCAPLUS <<LOGINID::20090331>>
DN 102:7028
OREF 102:1282h,1283a
TI Oligomannosides
PA Institute of Physical and Chemical Research, Japan; Sapporo Breweries Ltd.
SO Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 59036691	A	19840228	JP 1982-146663	19820824
JP 02061960	B	19901221		
PRAI JP 1982-146663		19820824		

IT 93340-81-9P 93340-84-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 93340-81-9 HCAPLUS
CN α-D-Mannopyranose, O-α-D-mannopyranosyl-(1→3)-O-α-D-mannopyranosyl-(1→3)-O-α-D-mannopyranosyl-(1→3)- (CA INDEX NAME)

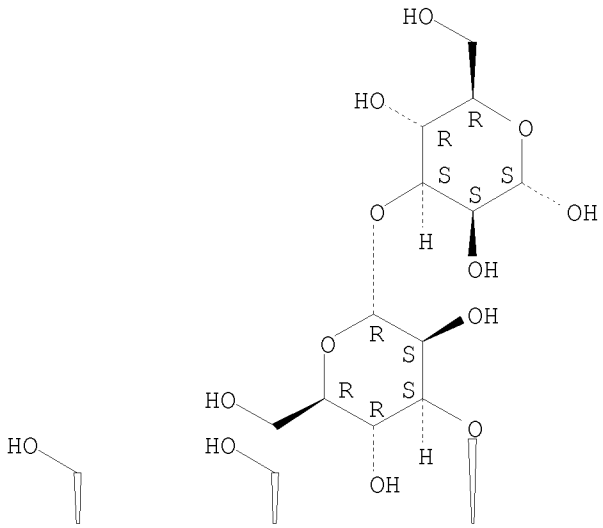
Absolute stereochemistry.



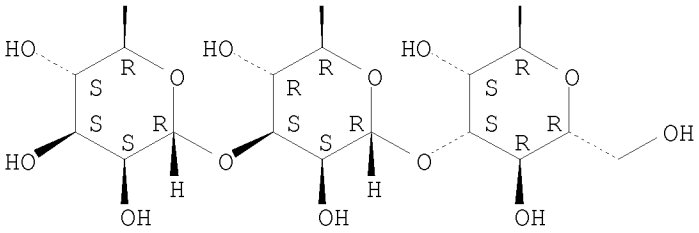
RN 93340-84-2 HCAPLUS
CN α-D-Mannopyranose, O-α-D-mannopyranosyl-(1→3)-O-α-D-mannopyranosyl-(1→3)-O-α-D-mannopyranosyl-(1→3)-O-α-D-mannopyranosyl-(1→3)- (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 2-A

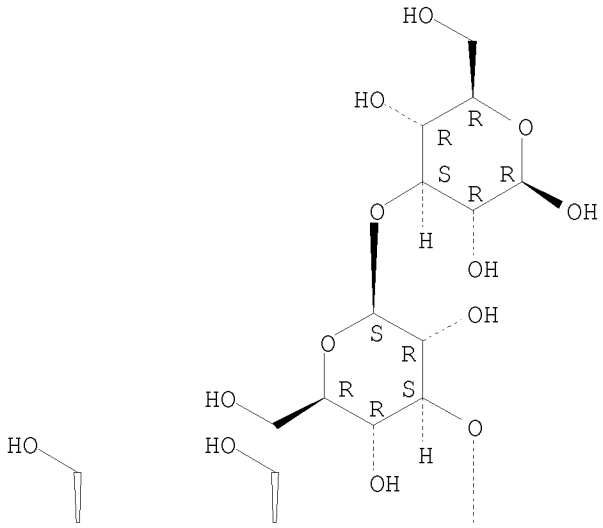


L9 ANSWER 12 OF 13 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Gel chromatography of (1 → 3), (1 → 4), and mixed-linkage (1 → 3),(1 → 4)-β-D-gluco-oligosaccharides
AB Four series of D-gluco-oligosaccharides were chromatographed on Bio Gel P-2, with H2O and aqueous boric acid as eluents: β-(1→3), β-(1→4), a β-(1→4) series terminated on the reducing end by a β-(1→3), and a β-(1→4) series terminated on the nonreducing end by a β-(1→3) linkage. Each set gave a linear plot of -log Kav vs. mol. weight Although the elution vols. for each series followed a similar pattern, there were distinct differences between each group. A β-(1→3)-linked glucose residue had more effect on the elution vols. when on the reducing end of a β-(1→4)-chain than when on the nonreducing end. Borate decreased the elution vols. of the β-(1→3) series and the compds. of lower d.p. of the β-(1→4) series terminated on the reducing end by a β-(1→3)-linked glucose residue.
AN 1982:574180 HCAPLUS <<LOGINID::20090331>>
DN 97:174180

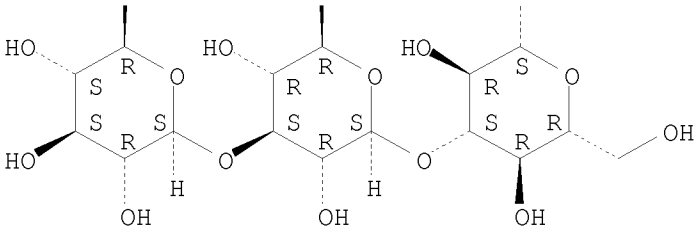
OREF 97:28857a,28860a
TI Gel chromatography of (1 → 3), (1 → 4), and mixed-linkage (1 → 3),(1 → 4)-β-D-gluco-oligosaccharides
AU Luchsinger, Wayne W.; Luchsinger, Susan W.; Luchsinger, David W.
CS Dep. Chem., Arizona State Univ., Tempe, AZ, 85287, USA
SO Carbohydrate Research (1982), 104(2), 153-9
CODEN: CRBRAT; ISSN: 0008-6215
DT Journal
LA English
IT 83409-48-7 83419-04-9
RL: ANT (Analyte); ANST (Analytical study)
(chromatog. of, gel)
RN 83409-48-7 HCAPLUS
CN β-D-Glucopyranose, O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)- (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A

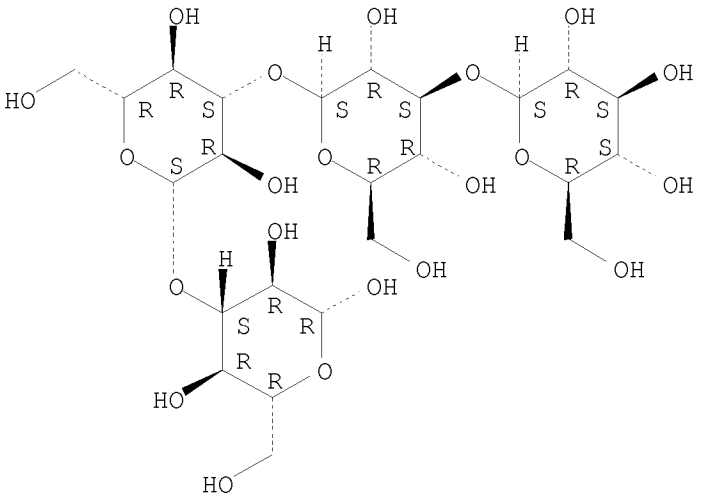


PAGE 2-A



RN 83419-04-9 HCAPLUS
CN β-D-Glucopyranose, O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→3)- (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L9 ANSWER 13 OF 13 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Characterization of intermediates up to lipid-linked heptasaccharide implicated in the biosynthesis of Saccharomyces cerevisiae mannoproteins
AB The lipid-linked oligosaccharide Glc3Man9(GlcNAc)2 serves as a precursor for the biosynthesis of the inner core portion of the asparagine-linked polysaccharide of S. cerevisiae mannoproteins. As a prelude to establishing its detailed structure and assembly, lipid-linked oligosaccharides belonging to the general structure Mann(GlcNAc)2, n = 1-5, and presumably serving as intermediates in the assembly sequence were isolated from an in vitro incubation of S. cerevisiae microsomes with UDP-N-acetylglucosamine and GDP-[14C]mannose. On the basis of size, elution characteristics on a column of concanavalin A-Sepharose, exo- and endoglycosidase digestions, acetolysis, and methylation anal., the structures of the major species within the tri- through heptasaccharides were determined These structures are identical with those of the major intermediates involved in the biosynthesis of asparagine-linked glycoproteins in animal tissues. Addnl., minor isomers were also observed in the tetrathrough heptasaccharides and structurally characterized. The lipid-linked assembly of the precursor unit for the inner core of S. cerevisiae mannoproteins might be similar to that in animal systems and modifications of the protein-linked polysaccharide occur that would give the final structure. The precise role of the minor isomers within the lipid-linked oligosaccharides in the assembly of the precursor oligosaccharide is presently unclear; it is possible that these arise due to a lack of specificity of the mannosyltransferases for acceptor substrates during the assembly process.
AN 1982:505804 HCAPLUS <<LOGINID::20090331>>
DN 97:105804
OREF 97:17523a,17526a
TI Characterization of intermediates up to lipid-linked heptasaccharide implicated in the biosynthesis of Saccharomyces cerevisiae mannoproteins
AU Prakash, Chandra; Vijay, Inder K.
CS Dep. Dairy Sci., Univ. Maryland, College Park, MD, 20742, USA

SO Biochemistry (1982), 21(19), 4810-18
CODEN: BICHAW; ISSN: 0006-2960
DT Journal
LA English
IT 82729-76-8
RL: BIOL (Biological study)
(of Saccharomyces cerevisiae, mannoprotein formation in relation to)
RN 82729-76-8 HCAPLUS
CN D-Glucose, O-α-D-mannopyranosyl-(1→3)-O-α-D-mannopyranosyl-(1→3)-O-α-D-mannopyranosyl-(1→4)-O-β-D-mannopyranosyl-[1→3(or 1→4)]-O-2-(acetylamino)-2-deoxy-β-D-glucopyranosyl-[1→3(or 1→4)]-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

CM 1

CRN 82729-75-7
CMF C24 H42 O21

Absolute stereochemistry.